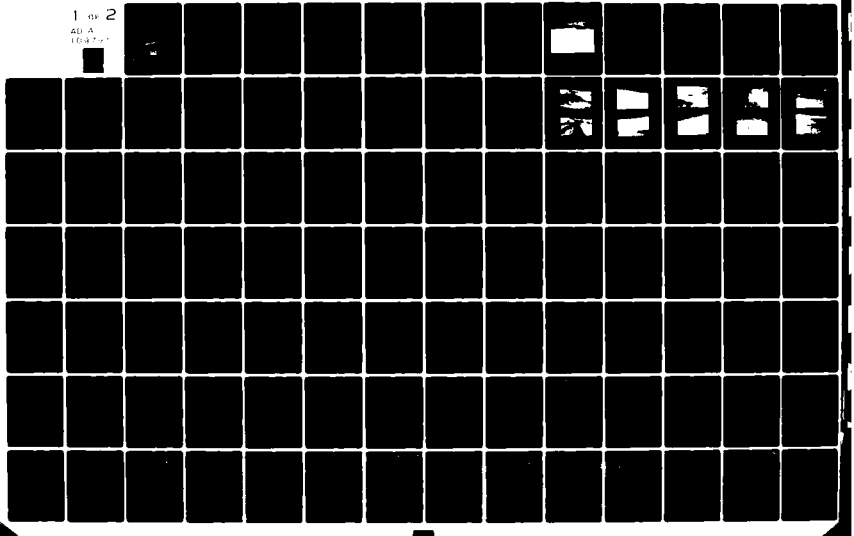
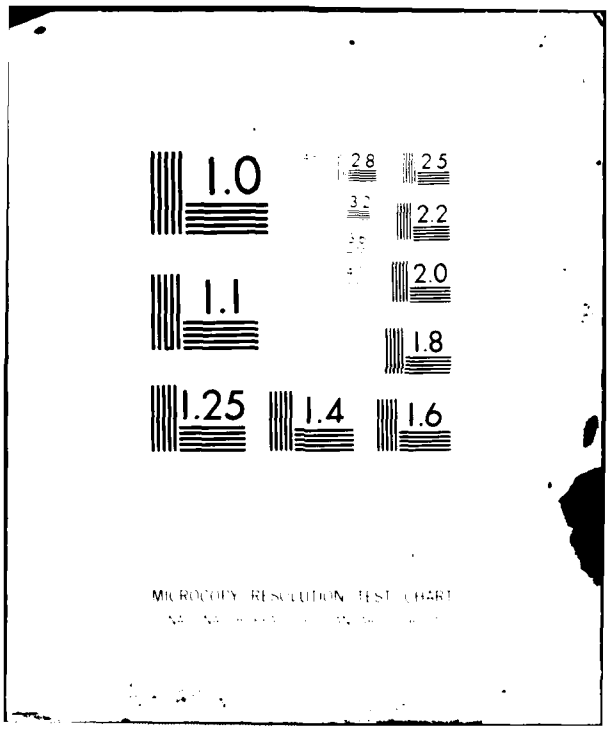
AD-A109 797 METCALF AND EDDY OF NEW YORK INC NY F/G 13/13
NATIONAL DAM SAFETY PROGRAM. LITTLE CHOCONUT WATERSHED SITE 2C --ETC(U)
SEP 81 G P FULTON DACW51-81-C-0044
UNCLASSIFIED NL




1.0
1.1
1.25
1.4
1.6
2.0
1.8
2.2
2.5
MICROCOPY RESOLUTION TEST CHART

SUSQUEHANNA RIVER BASIN

LITTLE CHOCONUT WATERSHED SITE 2C DAM

BROOME COUNTY, NEW YORK
INVENTORY NO. N.Y. 722

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

NEW YORK DISTRICT CORPS OF ENGINEERS

AUGUST 1981

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A109 717	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Phase I Inspection Report Little Choconut Watershed Site 2c Dam Oswego River Basin, Broome County, NY Inventory No. 722		5. TYPE OF REPORT & PERIOD COVERED Phase I Inspection Report National Dam Safety Program
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) GEORGE P. FULTON		8. CONTRACT OR GRANT NUMBER(s) DACW51-81-C-0044
9. PERFORMING ORGANIZATION NAME AND ADDRESS Metcalf and Eddy of New York, Inc. 60 East 42nd Street New York, New York 100017		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Department of the Army 26 Federal Plaza New York District, CofE New York, New York 10287		12. REPORT DATE 14 September 1981
		13. NUMBER OF PAGES
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) Department of the Army 26 Federal Plaza New York District, CofE New York, NY 10287		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; Distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Dam Safety
National Dam Safety Program
Visual Inspection
Hydrology, Structural Stability
Little Choconut Watershed Site 2c Dam
Oswego River Basin
Broome County

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization.

The examination of documents and a visual inspection of The Little Choconut Watershed Site 2C Dam did not reveal conditions which constitute a hazard to human life or property.

NDA 412741

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

The total discharge capacity of the spillways is adequate to impound and safely discharge the floodwaters resulting from the Probable Maximum Flood (PMF).

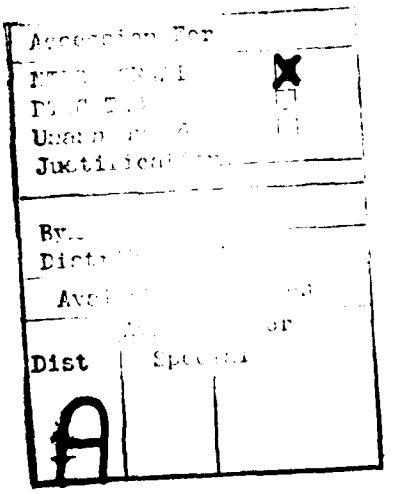
PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, and Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hudrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.



PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
LITTLE CHOCONUT WATERSHED SITE 2C DAM
I.D. No. NY-722
(#96A-3619)
SUSQUEHANNA RIVER BASIN
BROOME COUNTY, NEW YORK

TABLE OF CONTENTS

Phase I Inspection Report
National Dam Safety Program

Name of Dam:	Little Choconut Watershed Site 2C Dam I.D. No. NY-722
State Located:	New York
County Located:	Broome
Watershed:	Susquehanna River Basin
Date of Inspection:	July 10, 1981

ASSESSMENT:

The examination of documents and a visual inspection of The Little Choconut Watershed Site 2C Dam did not reveal conditions which constitute a hazard to human life or property.

The total discharge capacity of the spillways is adequate to impound and safely discharge the floodwaters resulting from the Probable Maximum Flood (PMF).

Several minor deficiencies were noted which should be corrected within six months of the date of final approval of this report.

The required actions are mowing the crown vetch on the dam and in the auxiliary spillway, repair areas eroded by vehicular traffic, replace missing planking from the top of the inlet riser, lubricate the slide gate stem, repair the animal guard on the internal drainage pipe, and visually monitor wet areas along the toe of the east slope of the auxiliary spillway. In addition, an emergency action plan for notification of downstream residents should be developed within the same time frame.

Edward M. Greco, P.E.
Project Manager
Metcalf & Eddy of New York, Inc.
New York Registration No. 47463

George P. Fulton, P.E.
Vice President
Metcalf & Eddy of New York, Inc.
New York Registration No. 22390

Approved By:

Col. W. M. Smith, Jr.
New York District Engineer

Date: 14 Sep 81

OVERVIEW
LITTLE CHOCONUT WATERSHED
SITE 2C DAM
ID NO. NY 722

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
LITTLE CHOCONUT WATERSHED SITE 2C DAM
I.D. No. NY-722
(#96A-3619)
SUSQUEHANNA RIVER BASIN
BROOME COUNTY, NEW YORK

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase I inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers, to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

This inspection was conducted to evaluate the existing conditions of the dam, to identify deficiencies and hazardous conditions, to determine if these deficiencies constitute hazards to life and property, and to recommend remedial measures where required.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam

The Little Choconut Watershed Site 2C Dam consists of an earth dam with a service spillway pipe passing through the embankment and an excavated auxiliary spillway passing around the eastern end of the dam.

The dam consists of a compacted earth embankment which is 59 feet high, has a crest length of 590 feet and a crest width of 19 feet. The upstream slope is 1 vertical on 3 horizontal with a 10 foot wide berm near the base of the slope. The downstream slope is 1 vertical on 2.5 horizontal. The crest and exposed slopes are covered with crown vetch. An earth cutoff trench of varying depth and width keys the embankment into the foundation soils.

The service spillway consists of a rectangular reinforced concrete drop inlet structure, a 30 inch diameter reinforced concrete pipe with anti-seepage collars and a concrete impact basin. A reservoir drain consisting of a 12 inch diameter cast iron pipe extends 45 feet upstream from the base of the spillway riser to an excavated 10 foot wide inlet channel. A vertical slide gate mechanism mounted along the inside of the riser controls the flow through the reservoir drain. The auxiliary spillway is an earth cut with a bottom width of 160 feet.

The internal drainage system consists of twin 10-inch bituminous coated perforated corrugated metal pipes in a drain fill trench located downstream of the centerline of the dam, symmetric about the service spillway and approximately parallel with the downstream toe. Seepage is conducted through these drains to discharge in the concrete impact basin

beyond the baffle structure.

b. Location

The Little Choconut Watershed Site 2C Dam is located off New Ireland Road in the Town of Maine. The structure is approximately 0.25 miles north of the Village of New Ireland.

c. Size Classification

The dam is 59 feet high and has a maximum storage capacity of almost 1,400 acre-feet. Therefore, the dam is in the intermediate size category as defined by the "Recommended Guidelines for Safety Inspection of Dams."

d. Hazard Classification

This dam is classified as "high" hazard due to the presence of a number of homes in the Village of New Ireland located downstream of the dam.

e. Ownership

The dam is owned by Broome County, New York. Mr. Darrell Stone, Broome County, Deputy Commissioner of Public Works was contacted; telephone number is (607) 772-2871.

f. Purpose of Dam

The dam is a floodwater retarding structure.

g. Design and Construction History

The dam was designed by the U.S. Department of Agriculture, Soil Conservation Service (SCS). The SCS district office in Syracuse has a design folder containing hydrologic, hydraulic and structural design information. Dam construction was performed by Les Strong, Inc. and was completed in 1968.

h. Normal Operating Procedures

Normal flows are discharged through the service spillway. This structure has sufficient capacity to store and discharge a 100 year flood without discharge occuring in the auxiliary spillway. For storms in excess of the 100 year flood, discharge through the auxiliary spillway can be expected.

1.3 PERTINENT DATA

a. Drainage Area (square miles)	3.5
b. Discharge at Dam (cfs)	
Service Spillway at maximum high water	145
Service Spillway at auxiliary spillway crest elev.	132
Auxiliary Spillway at maximum high water	15,685
Reservoir drain at service spillway crest elevation	14.3

c. Elevation (USGS Datum)

Top of Dam	1241.0
Auxiliary Spillway Crest	1231.1
Service Spillway Crest	1199.8
Reservoir Drain (invert elevation)	1185.0

d. Reservoir Surface Area (acres)

Top of Dam	62.8
Auxiliary Spillway Crest	47.3
Service Spillway Crest	5.7

e. Storage Capacity (acre-feet)

Top of Dam	1,271
Auxiliary Spillway Crest	733
Service Spillway Crest	0

f. Dam

Embankment type - A compacted earth fill with a keyed earth cut-off trench, and a drain parallel to the axis of dam

Embankment length (ft) 590

Slopes - Upstream: 1 vertical on 3.0 horizontal with 10 foot wide berm - slope below berm is 1 vertical on 3 horizontal

Downstream: 1 vertical on 2.5 horizontal

Crest Width (ft) 19

g. Service Spillway

Type: Ungated, reinforced concrete drop inlet (2.5 x 7.5 ft), rising 19 feet above the invert of the 30 inch diameter concrete conduit; length of conduit 284.33 feet

Weir length (ft). 13.3

h. Auxiliary Spillway

Type: An excavated, trapezoidal channel with a crown vetch lining.

Bottom Width (ft)	160
Side Slopes (V:H)	1:2.5, 1:3.0
Exit Slope (ft/ft)	0.028

i. Reservoir Drain

Type: 12 inch diameter cast iron pipe

Control: Manually operated vertical slide gate mounted along the inside of the service spillway riser.

SECTION 2: ENGINEERING DATA

2.1 GEOTECHNICAL DATA

a. Geology

The Little Choconut Watershed Site 2C Dam is located in the Allegheny Plateau Physiographic Province of southern New York State. It is approximately 4 miles north of Johnson City. The moderately steep slopes on the site are typical of the glacial topography of the area. There is no bedrock exposed anywhere on the site, and none was encountered in any of the drill holes or test pits. Approximately 1.5 miles north of Site 2-C, along the New Ireland Road, siltstone and shale (a shaly siltstone) of the Upper Devonian period outcrop along the roadside.

The till deposits in the Binghamton area have been classified as two facies of the Wisconsin glacial movement. It has been suggested by at least one author that the Binghamton facies will not be found at elevations above 950'. This would indicate that the material on this site would be classified as the Olean facies of the Wisconsin glacial period.

There is a thin layer (approx, 2' - 3') of recent alluvial material which overlies the glacial till across the flood plain.

Some of the tills located in the flood plain, below the recent alluvium, appear to have been reworked in some way, causing a lower percent of fines to be associated with this material. However, it still classifies as a GM material.

b. Subsurface Investigations

A subsurface investigation program was conducted by SCS. Test pits and drill holes were progressed in 1965. A total of 18 borings and 17 test pits were taken at locations along the dam auxiliary spillway and structural elements. Applicable subsurface information has been included in Appendix F.

In order to penetrate the denser till, an average excavation depth of five feet was recommended for the principal spillway. Material from the auxiliary spillway was determined to be uniform and capable of providing a homogeneous embankment material. Bedrock was not encountered in any of the test holes. Testing of the samples taken indicated a significant percentage of fines in the till and subsequently a low permeability rate.

2.2 DESIGN RECORDS

This dam was designed by the Soil Conservation Service, who prepared a design report. A folder containing the design report and other design information was available at the SCS district office in Syracuse. Eighteen drawings, several of which have been included in Appendix F, were prepared for the construction of this dam.

2.3 CONSTRUCTION RECORDS

Complete construction records are available from the SCS office in Syracuse. The construction drawings in Appendix are noted to be as-built record drawings.

2.4 OPERATION RECORDS

Since the dam is an uncontrolled, floodwater retarding structure, no operating records are maintained regarding water levels. However, during periods of heavy rainfall, SCS personnel do monitor reservoir levels.

2.5 EVALUATION OF DATA

The data presented in this report has been compiled from information obtained from the Soil Conservation Service as well as the New York State Department of Environmental Conservation files. It appears to be adequate and reliable for Phase I inspection purposes.

SECTION 3: VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspection of the Site 1 dam was conducted on July 10, 1981. The weather was partly cloudy and the temperature was in the eighties. The water surface at the time of the inspection was at the weir crest of the concrete riser.

b. Embankment

No signs of distress were observed in the earth embankment and no evidence of seepage, misalignment, subsidence or surface cracking were noted on the embankment. The only deficiencies noted were of a minor nature. Consideration should be given to mowing all embankment slopes as the crown vetch averages 3 feet in height. Minor erosion mainly due to vehicular traffic present on the top of the dam and on the upstream slope at the west abutment.

An internal drainage system composed of 2 - 10 inch diameter pipes surrounded by drain-fill material provides drainage at the base of the embankment. At the time of the inspection, there was no flow coming from the pipes. The outlet ends of the drainage pipes are covered by small animal guards. The guard for the outlet on the west side of the impact basin has been vandalized.

c. Service Spillway

The service spillway consists of a vertical drop inlet structure, a reinforced concrete pipe and reinforced concrete impact basin at the conduit outlet. The elements which were visible appeared to be in good condition. One section of galvanized planking was missing from the top of the inlet riser. Minor rust was visible on the trash racks, planking, slide gate stem, and the bolts for the metal work. Minor staining of the concrete was noted in the impact basin.

d. Auxiliary Spillway

The auxiliary spillway is located in an earth cut at the eastern end of the dam. A 3-foot high growth of crown vetch covers the channel and side slopes. Erosion due to vehicular traffic exists on the crest and side slopes. Wet areas with cattails occur along the toe of the east side slope. The spillway discarges into a natural wooded area.

e. Reservoir Drain

The 12 inch diameter reservoir drain and manually operated slide gate may be used to lower the reservoir. The drain was reported to be operational.

f. Reservoir

There were no signs of serious soil instability in the reservoir area.

g. Downstream Channel

The downstream channel below the impact basin was stone filled for a distance. Beyond the area which was disturbed by construction, the channel was cut into natural ground. Heavy brush and some trees were growing along the edge of the channel.

3.2 EVALUATION OF OBSERVATIONS

Visual inspection of this dam revealed the following deficiencies:

1. The 3-foot high crown vetch cover on all features of the dam and auxiliary spillway hindered a more thorough visual inspection.
2. Erosion of the vegetative cover due to vehicular traffic on the top and upstream slope of the dam and in the channel and side slopes of the auxiliary spillway.
3. A section of galvanized planking missing from the top of the inlet riser.
4. Minor rust on the gate stem on the low-level outlet.
5. A vandalized animal guard on the west outlet of the internal drainage system.
6. Wet areas along the toe of the west side slope of the auxiliary spillways.

SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURES

The normal water surface elevation is at the crest of the principal spillway riser. Downstream flows are limited by flow into the riser, except during periods of extremely heavy runoff when the auxiliary spillway is in service.

4.2 MAINTENANCE OF DAM

The dam is maintained by the owner. Yearly technical inspections are conducted by Broome County Personnel. Construction of the dam was completed in 1968. Consideration should be given to mowing the top and slopes of the dam as well as the channels and slopes of the auxiliary spillway. The dam appeared to be satisfactorily maintained.

4.3 WARNING SYSTEM IN EFFECT

Notification of the local civil defense agent is the only warning system in use at this time. A system for notification of residents downstream of the dam is currently being investigated by Broome County.

4.4 EVALUATION

The operation and maintenance procedures for this dam are satisfactory.

SECTION 5: HYDROLOGIC/HYDRAULIC

5.1 DRAINAGE AREA CHARACTERISTICS

Delineation of the 3.5 square mile watershed of the Site 1 dam was made using the USGS 7.5 minute quadrangle for Castle Creek, New York. The watershed consists of open grassed fields and woodlands. Relief in the drainage area ranges from moderate to steep.

5.2 ANALYSIS CRITERIA

The analysis of the floodwater retarding capability of this dam was performed using the Corps of Engineers HEC-1 computer program, Dam Safety version. This program develops an inflow hydrograph using the Snyder Synthetic Unit Hydrograph method and then uses the "Modified Puls" flood routing procedure. The spillway design flood selected was the Probable Maximum Flood (PMF) in accordance with the Recommended Guidelines of the U.S. Army Corps of Engineers.

5.3 SPILLWAY CAPACITY

The principal and auxiliary spillways are uncontrolled structures. The capacities for both spillways were taken from the stage-discharge data included in the SCS design report.

The spillways have sufficient capacity for discharging the peak outflow from the PMF. For this storm, the peak inflow is 5,814 cfs and the peak outflow is 5,716 cfs. When the spillways are discharging the peak outflow, the water surface will be 4.4 feet below the top of the dam. Further information concerning this analysis is included in Appendix C.

5.4 RESERVOIR CAPACITY

Normal flood control storage capacity of the reservoir between the principal and auxiliary spillways is 733 acre-feet which is equivalent to a runoff depth of 3.94 inches over the drainage area. Surcharge storage capacity to the maximum high water elevation is an additional 538 acre-feet, equivalent to a runoff depth over the drainage area of 2.89 inches. Total storage capacity of the dam is 1,271 acre-feet.

5.5 FLOODS OF RECORD

The maximum known flood occurred during September, 1975. The pool level at this time was reported to be about elevation 1217.6. No higher water has been recorded since the dam was completed in 1968.

5.6 OVERTOPPING POTENTIAL

Analysis indicates that the total discharge capacity is sufficient to prevent overtopping from the PMF.

5.7 EVALUATION

This dam has sufficient capability to impound and adequately discharge floodwaters expected to result from the PMF.

SECTION 6: STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

No signs of distress were observed in connection with the earth embankment.

b. Design and Construction Data

Design data was obtained from SCS (see Appendix D Stability Computations). Stability analyses were performed using the Swedish circle method of analysis. Two undrained triaxial shear tests were performed on compacted soil samples from the auxiliary spillway excavation. These tests were used to select soil parameters for use in the analysis. One case was analyzed on the upstream slope. For rapid drawdown from the permanent pool elevation, considering a 10' berm at elevation 1199.8 and a 1 on 3 slope, the minimum factor of safety was 1.53. For the downstream slope, long term steady seepage was analyzed. The minimum factor of safety for this case was 1.86.

c. Post Construction Changes

There have been no changes in the construction of the dam since it was completed in 1968.

d. Seismic Stability

The dam is located in Seismic Zone 1. No records of any seismic stability analysis performed for this structure could be located.

SECTION 7: ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

The Phase I inspection of the Little Choconut Watershed Site 2C Dam did not reveal conditions which constitute a hazard to human life or property. The earth embankment is considered to be stable and the spillways are capable of retarding and safely discharging floodwaters resulting from the Probable Maximum Flood (PMF).

b. Adequacy of Information

Information reviewed for Phase I inspection purposes is considered to be adequate.

c. Need for Additional Investigations

No additional investigations are necessary at this time.

d. Urgency

Remedial measures listed below should be completed by the Owner within 6 months of the date of final approval of this report.

7.2 RECOMMENDED MEASURES

The following actions should be taken within six months of the date of final approval of this report:

a. Mow the crown vetch cover to facilitate future inspection evaluations.

b. Repair areas eroded by vehicular traffic and consider methods to limit further trespass.

c. Replace missing planking on top of the inlet riser.

d. Lubricate the slide gate stem to insure continued operability.

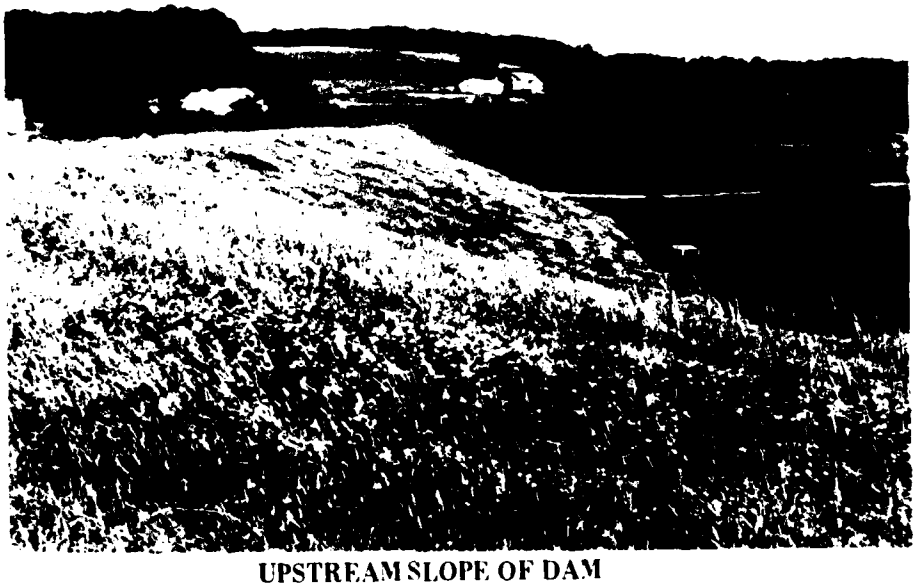
e. Repair the animal guard on the internal drainage pipe.

f. Visually monitor the wet areas along the toe of the east side slope of the auxiliary spillway. If increased seepage causes instability of the slope, install horizontal drains into the hillside.

g. Develop an emergency action plan for notification of downstream residents in the event of large auxiliary spillway discharges.

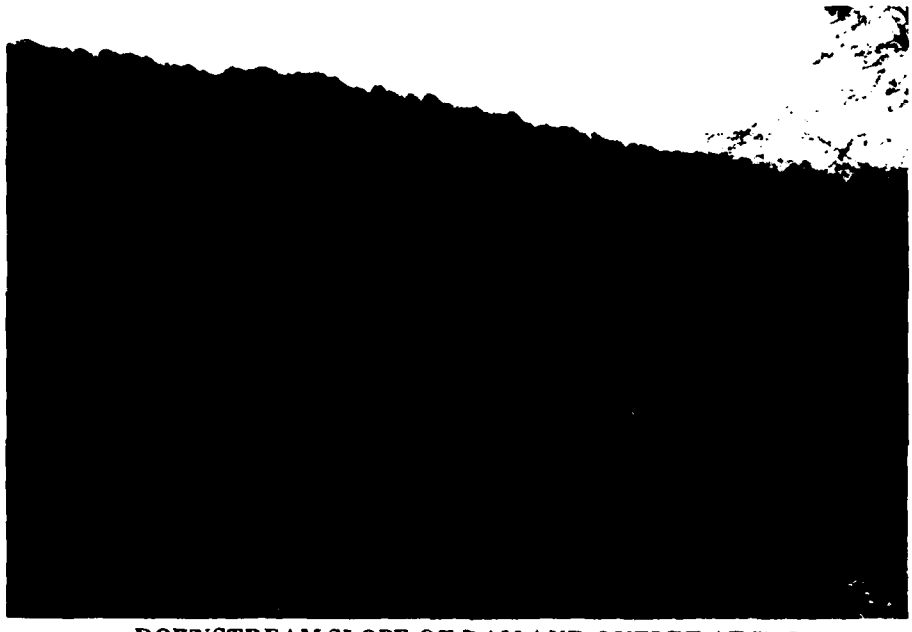
APPENDIX A

PHOTOGRAPHS



UPSTREAM SLOPE OF DAM

TOP OF DAM AND TIRE TRACKS



DOWNSTREAM SLOPE OF DAM AND OUTLET AT TOE

DISCHARGE CHANNEL BELOW OUTLET

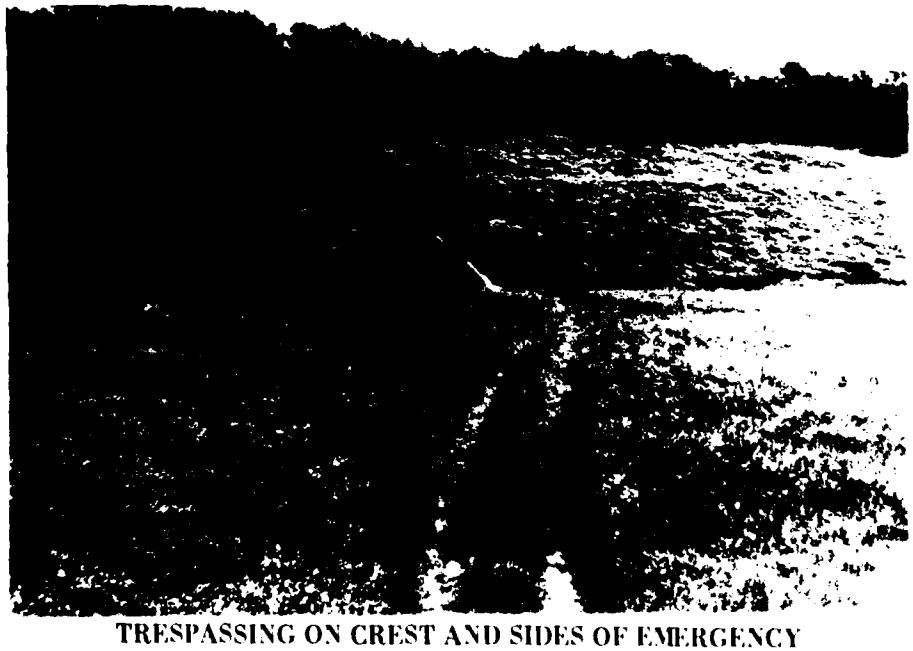
INTAKE STRUCTURE (FOREGROUND) AND APPROACH
CHANNEL OF EMERGENCY SPILLWAY (BACKGROUND)

EMERGENCY SPILLWAY CHANNEL NEAR CREST

OUTLET STRUCTURE

OUTLET END OF DISCHARGE PIPE

TIRE TRACKS ON UPSTREAM SLOPE AT RIGHT ABUTMENT



TRESPASSING ON CREST AND SIDES OF EMERGENCY SPILLWAY

APPENDIX B

VISUAL INSPECTION CHECKLIST

93-15-3(9/80)

VISUAL INSPECTION CHECKLIST

1) Basic Data

a. General

Name of Dam LITTLE CHOCONUT WATERSHED SITE 2C DAM

Fed. I.D. # NY 722 DEC Dam No. 96A-3619

River Basin SUSQUEHANNA

Location: Town MAINE County BROOME

Stream Name LITTLE CHOCONUT CREEK

Tributary of

Latitude (N) 42° 11.0′ Longitude (W) 75° 57.3′

Type of Dam EARTH EMBANKMENT

Hazard Category C

Date(s) of Inspection JULY 10, 1981

Weather Conditions PARTLY CLOUDY - 85°

Reservoir Level at Time of Inspection AT INTAKE RISER WEIR CREST

b. Inspection Personnel R. BARRON, L. BRANAGAN, W. CHECCHI, G. PAGE (SCS), P. SCERENTINO (BROOME COUNTY), S. PIERCE, C. SWEET

c. Persons Contacted (Including Address & Phone No.) MR. DARRELL STONE - DEPUTY COMMISSIONER OF PUBLIC WORKS, BROOME COUNTY OFFICE BLDG. HOLLY ST., BINGHAMPTON, N.Y., 13901 — 607-772-2871

MR. GARY PAGE - SCS BROOME COUNTY AIRPORT OFFICE - 607-773-2751

d. History:

Date Constructed 1968 COMPLETED Date(s) Reconstructed

Designer SOIL CONSERVATION SERVICE (N.Y.S. D.O.T.)

Constructed By LES STRONG, INC.

Owner BROOME COUNTY

2) Embankment

a. Characteristics

(1) Embankment Material COMPACTED TILL

(2) Cutoff Type COMPACTED EARTH

(3) Impervious Core NONE

(4) Internal Drainage System YES

(5) Miscellaneous CROWN VETCH AS EARTH COVER

b. Crest

(1) Vertical Alignment GOOD

(2) Horizontal Alignment CURVED

(3) Surface Cracks NONE

(4) Miscellaneous TIRE TRACKS ALONG CREST

c. Upstream Slope

(1) Slope (Estimate) (V:H) 1 ON 3

(2) Undesirable Growth or Debris, Animal Burrows 3-FOOT HIGH CROWN VETCH

(3) Sloughing, Subsidence or Depressions MINOR EROSION ALONG AUXILIARY SPILLWAY EMBANKMENT CONTACT - TIRE TRACKS WEST OF INTAKE RISER

(4) Slope Protection CROWN VETCH ON SLOPES - SMALL STONE RIPRAP ON 10-FOOT BERM

(5) Surface Cracks or Movement at Toe NONE

d. Downstream Slope

(1) Slope (Estimate - V:H) 1 ON 2.5

(2) Undesirable Growth or Debris, Animal Burrows 3-FOOT HIGH CROWN VETCH

(3) Sloughing, Subsidence or Depressions MINOR EROSION ALONG WEST ABUTMENT CONTACT - FOOT PATH ON SLOPE WEST OF IMPACT BASIN

(4) Surface Cracks or Movement at Toe NONE

(5) Seepage NONE

(6) External Drainage System (Ditches, Trenches; Blanket) NONE

(7) Condition Around Outlet Structure GOOD - 3-FOOT HIGH CROWN VETCH - RIPRAP

(8) Seepage Beyond Toe NONE

e. Abutments - Embankment Contact

EARTH TO EARTH

93-15-3(9/80)

(1) Erosion at Contact MINOR

(2) Seepage Along Contact NONE

3) Drainage System

a. Description of System TWO - 10-INCH DIAMETER - PERFORATED CORRUGATED METAL PIPES WITH SMALL ANIMAL GUARDS

b. Condition of System OKAY - WESTERLY ANIMAL GUARD VANDALIZED

c. Discharge from Drainage System NONE

4) Instrumentation (Momumentation/Surveys, Observation Wells, Weirs, Piezometers, Etc.) NONE

93-15-3(9/80)

5) Reservoir

a. Slopes STEEP WITH BRUSH AND TREES

b. Sedimentation MINOR - FROM ACCESS ROADWAY AREA NORTHWEST OF DAM EMBANKMENT

c. Unusual Conditions Which Affect Dam NONE

6) Area Downstream of Dam

a. Downstream Hazard (No. of Homes, Highways, etc.) VILLAGE OF NEW IRELAND

b. Seepage, Unusual Growth NONE

c. Evidence of Movement Beyond Toe of Dam NONE

d. Condition of Downstream Channel HEAVY BRUSH AND TREES ALONG CHANNEL

7) Spillway(s) (Including Discharge Conveyance Channel)

a. General CONCRETE INTAKE RISER → CONCRETE CONDUIT → CONCRETE IMPACT BASIN WITH BAFFLE

AUXILIARY SPILLWAY - CHANNEL IN EARTH CUT - CROWN VETCH

b. Condition of Service Spillway SATISFACTORY - MINOR RUSTING OF GALVANIZED TRASH RACKS, GRATING, AND HOLD DOWN BOLTS; ONE SECTION OF GRATING MISSING; MINOR EROSION OF CONCRETE ALONG WEIR CREST OF RISER; VERTICAL CRACK RUNNING FULL HEIGHT OF THE OVERHANGING WING OF THE CONCRETE INTAKE RISER

c. Condition of Auxiliary Spillway SATISFACTORY – 3-FOOT HIGH CROWN VETCH ON SPILLWAY AND EMBANKMENTS; CATTAILS AND WET AREAS ALONG TOE OF EAST ABUTMENT; RUNOFF GULLIES ALONG BERM ON ABUTMENT SLOPE

d. Condition of Discharge Conveyance Channel HEAVY BRUSH AND TREES ALONG DOWNSTREAM CHANNEL

8) Reservoir Drain/Outlet

Type: Pipe ✓ Conduit _____ Other _____

Material: Concrete _____ Metal ✓ Other _____

Size: 12-INCH Length 46-FEET

Invert Elevations: Entrance 1185.0 Exit 1182.5

Physical Condition (Describe): Unobservable ✓

Material: _____

Joints: _____ Alignment _____

Structural Integrity: _____

Hydraulic Capability: _____

Means of Control: Gate ✓ Valve _____ Uncontrolled _____

Operation: Operable ✓ Inoperable _____ Other _____

Present Condition (Describe): MINOR RUSTING OF SLIDE GATE STEM AND WRENCH SOCKET

9) Structural

a. Concrete Surfaces SATISFACTORY – MINOR EROSION ALONG INTAKE RISER WEIR CREST, MINOR STAINING OF CONCRETE 0.5' ABOVE DISCHARGE INVERT AT IMPACT BASIN

b. Structural Cracking MINIMAL – ONE VERTICAL CRACK ALONG THE HEIGHT OF THE OVERHANGING WING OF THE NORTH INTAKE RISER WALL AT THE CONTACT

c. Movement - Horizontal & Vertical Alignment (Settlement) NONE

d. Junctions with Abutments or Embankments GOOD

e. Drains - Foundation, Joint, Face GOOD

f. Water Passages, Conduits, Sluices GOOD

g. Seepage or Leakage NONE

h. Joints - Construction, etc. GOOD

i. Foundation OKAY

j. Abutments OKAY

k. Control Gates NOT OBSERVABLE

l. Approach & Outlet Channels APPROACH - NOT OBSERVABLE
OUTLET - OKAY, SMALL STONE RIPRAP

m. Energy Dissipators (Plunge Pool, etc.) BAFFLE IN IMPACT BASIN

n. Intake Structures GOOD

o. Stability

p. Miscellaneous

10) Appurtenant Structures (Power House, Lock, Gatehouse, Other)

a. Description and Condition NONE

11) Operation Procedures (Lake Level Regulation):

N/A (FLOOD CONTROL)

APPENDIX C

HYDROLOGIC/HYDRAULIC ENGINEERING DATA AND COMPUTATIONS

CHECK LIST FOR DAMS
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

AREA-CAPACITY DATA:

	Elevation (ft.)	Surface Area (acres)	Storage Capacity (acre-ft.)
1) Top of Dam	1241.0	62.8	1271
2) Design High Water (Max. Design Pool)	1234.0	51.8	873
3) Auxiliary Spillway Crest	1231.1	47.3	733
4) Pool Level with Flashboards	N/A	N/A	N/A
5) Service Spillway Crest	1199.8	5.7	0

DISCHARGES

	Volume (cfs)
1) Average Daily	UNKNOWN
2) Spillway @ Maximum High Water	15685
3) Spillway @ Design High Water	1950
4) Spillway @ Auxiliary Spillway Crest Elevation	132
5) Low Level Outlet	14
6) Total (of all facilities) @ Maximum High Water	
7) Maximum Known Flood	UNKNOWN
8) At Time of Inspection	± .01

CREST: ELEVATION: 1241.0

Type: GRASSED EARTH

Width: 19' Length: 590'

Spillover AUXILIARY CHANNEL

Location EAST END OF DAM

SPILLWAY:

SERVICE		AUXILIARY
1199.8	Elevation	1231.1
R/C DROP INLET	Type	EARTH CUT CHANNEL
WEIR LENGTH 13.3'	Width	160'
	Type of Control	
✓	Uncontrolled	✓
	Controlled:	
	Type (Flashboards; gate)	
	Number	
	Size/Length	
	Invert Material	
	Anticipated Length of operating service	
	Chute Length	
	Height Between Spillway Crest & Approach Channel Invert (Weir Flow)	

HYDROMETEROLOGICAL GAGES:

Type : NONE

Location: _____

Records:

Date - _____

Max. Reading - _____

FLOOD WATER CONTROL SYSTEM:

Warning System: CONTACT COUNTY CIVIL DEFENSE — COUNTY CURRENTLY WORKING ON NOTIFICATION PROGRAM FOR RESIDENTS

Method of Controlled Releases (mechanisms):

RESERVOIR DRAIN

DRAINAGE AREA: 3.49 Sq. Mi.

DRAINAGE BASIN RUNOFF CHARACTERISTICS:

Land Use - Type: FARMS WOODLANDS

Terrain - Relief: GRASS - FORESTS

Surface - Soil: TILL

Runoff Potential (existing or planned extensive alterations to existing (surface or subsurface conditions)

NONE

Potential Sedimentation problem areas (natural or man-made; present or future)

ACCESS ROADWAY NORTHWEST OF DAM

EMBANKMENT

Potential Backwater problem areas for levels at maximum storage capacity including surcharge storage:

NONE

Dikes - Floodwalls (overflow & non-overflow) - Low reaches along the Reservoir perimeter:

Location: NONE

Elevation:

Reservoir:

Length @ Maximum Pool _____ (Miles)

Length of Shoreline (@ Spillway Crest) 0.5 (Miles)

Project NY C&E Dam Inspection Acct. No. 7594 Page 1 of 2
Subject Little Chocorua Compt'd. By Date 8/20/81
Detail Ck'd. By Date

DRAINAGE AREA = 3.49 SQ MI

Impervious areas include:

2 ponds	9.0 acres
reservoir	5.7 acres
total	14.7 acres

The ratio of impervious area to total area is

$$\frac{14.7 \text{ ac} / 640 \text{ ac/sq mi}}{3.5} = 0.007$$

WATERSHED PARAMETERS

Snyder Unit Hydrograph
Lag time:

$$t_p = C_t (LL_c)^{0.3}$$

Where $C_t = 2.0$
$L = 3.6$ mi
$L_c = 1.8$ mi

$$t_p = 2.0 (3.6 \cdot 1.8)^{0.3} = 3.50 \text{ hrs}$$

Unit rainfall duration

$$t_r = t_p / 5.5$$

$$= 3.50 / 5.5 = 0.64 \text{ hrs}$$

adjusted $t_R = 0.5$ hrs

Adjusted lag time

$$t_{pR} = t_p + 0.25 (t_R - t_r)$$

$$= 3.5 + 0.25 (0.5 - 0.64) = 3.47 \text{ hrs.}$$

Peaking Coefficient, $C_P = 0.6$

Base Flow

Based on design computations for the dam, the base flow for the stream is 47 cfs.
(These design computations are included after sheet C-2.)

Based on other dam inspection reports, RTIOR = 1.5 and QRCSN is 15%

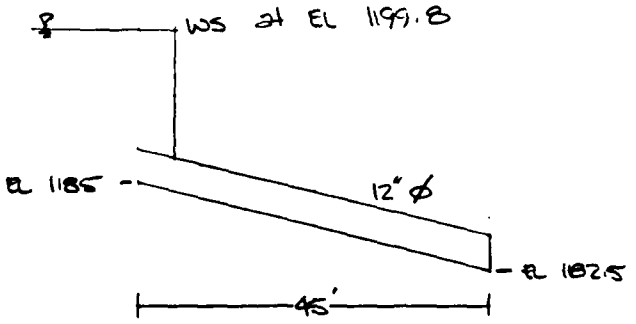
STORAGE

Stage - storage values were obtained from the design computations and are included following sheet 2

SPILLWAY CAPACITY

Spillway capacity computations were obtained from the design computations and are included following sheet 2

LOW LEVEL OUTLET



Calculate discharge:

$$Q = 0.6 A \sqrt{2gH}$$

$$= 0.6 \pi (.5)^2 \sqrt{2(64.4)(1199.8 - 1185.5)}$$

$$= 14.3 \text{ cfs}$$

COMPUTATION SHEET
SCS 223 REV 5-58

U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE New York | PROJECT Little Chocenut Creek Watershed Site 2C
BY JCI | DATE 9/65 | CHECKED BY [illegible] | DATE 10/65 | JOB NO. NY-2018 ✓
SUBJECT Principal Spillway | SHEET 2 OF 3

100-year frequency

Site	1-day rainfall CN AMC II	1-day rainfall	1-day runoff Q_1	10-day rainfall CN AMC II	10-day rainfall	10-day runoff Q_{10}	Q_1/Q_{10}	T_c	DA	Serial No.
2A	83	5.8	3.90	69	9.7	5.82	0.670	0.50	0.63	6
2B	74	5.8	3.02	57	9.7	4.26	0.709	1.36	1.60	6
2C	77	5.8	3.30	61	9.7	4.79	0.689	1.44	3.49	6
2E	73	5.8	2.92	56	9.7	4.13	0.707	2.41	1.92	14
2	74	5.8	3.02	57	9.7	4.26	0.709	1.34	5.0	6

Compute the climatic index

$$C_1 = \frac{100\ P_0}{(T_0)^2} = \frac{100 \times 36.24}{45.8^2} = 1.73$$

$P_0 = 36.24"$
$T_0 = 45.8°$

Channel Losses

The climatic index is greater than (1)
The soils would reduce the loss to a min.
∴ Channel losses are not considered.

Base Flow (Determine the minimum permissible base flow)

Assume 2 csm base flow.
From Table 21.4 using $C_1 = 1.73$ Base Flow = 0.226"/day
= 7.67 csm

Snow melt (Determine the minimum permissible snow melt)

$$S_{mc} = \frac{P_m\ (40 - T_m)}{2}$$

$T_m = 31.3°$
$P_m = 2.89"$

$$= \frac{2.89\ (40 - 31.3)}{2} = 12.57 \text{ csm}$$

$$S_{mi} = \frac{2.89\ (40 - 31.3)}{53.8} = 0.467"/\text{day}$$

This rate is greater than the computed base flow
∴ Snow melt will be used.

SCS-523 REV 5-58

SOIL CONSERVATION SERVICE

STATE	PROJECT		
New York	Little Chaconut		Site 2-C ✓
BY / DATE	CHECKED BY / DATE		JOB NO.
JFH / 10/65	WG / 11/65		NY-2018
SUBJECT			SHEET
Principal Spillway			2 OF 4

Q_{10} = 4.79^{-1} Snowmelt = 0.500"/day ✓ Table 21.10

A = 3.49 sq mi. A Q_{10} = 16.717 Mi^2 inches Serial #6

Time	Preliminary PSMC	Accum. Snow Melt	PSMC	PSMC	Preliminary PSH	Snow Melt	PSH
days	Inches	Inches	Inches	Ac-ft	cfs	cfs	cfs
0	0	0	0	0	0	47	47
0.1	0.003	0.050	0.053	10	6		53
0.5	0.033	0.250	0.283	53	8		55
1.0	0.079	0.500	0.579	108	9		56
2.0	0.179	1.000	1.179	219	11		58
3.0	0.313	1.500	1.813	338	14		61
3.5	0.404	1.750	2.154	401	19		66
4.0	0.525	2.000	2.525	470	24		71
4.2	0.585	2.100	2.685	500	34		81
4.4	0.671	2.200	2.871	534	48		95
4.6	0.776	2.300	3.076	573	57		104
4.7	0.842	2.350	3.192	594	70		117
4.8	0.925	2.400	3.325	619	94		141
4.9	1.051	2.450	3.501	652	152		199
5.0	2.071	2.500	4.571	851	1835		1882
5.1	3.327	2.550	5.877	1094	614		661
5.2	3.753	2.600	6.353	1183	218		265
5.3	3.920	2.650	6.570	1223	106		153
5.4	4.010	2.700	6.710	1249	71		118
5.5	4.075	2.750	6.825	1271	56		103
5.6	4.126	2.800	6.926	1289	43		90
5.8	4.201	2.900	7.101	1322	33		80
6.0	4.262	3.000	7.262	1352	27		74
6.5	4.384	3.250	7.634	1421	23		70
7.0	4.476	3.500	7.976	1485	17		64
8.0	4.611	4.000	8.611	1603	12		59
9.0	4.713	4.500	9.213	1715	9		56
10.0	4.785	5.000	9.785	1822	7		54
10.1	4.790	5.050	9.840	1832	0.3		47
10.3	4.790	5.150	9.940	1850	0		47
11.0	4.790	5.500	10.290	1915			

SCS 344 5 57
Tabular Computations

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Comp arc
Check JFF 7/65

Little Choconut Watershed

Site 2-C NY-201B

3-1

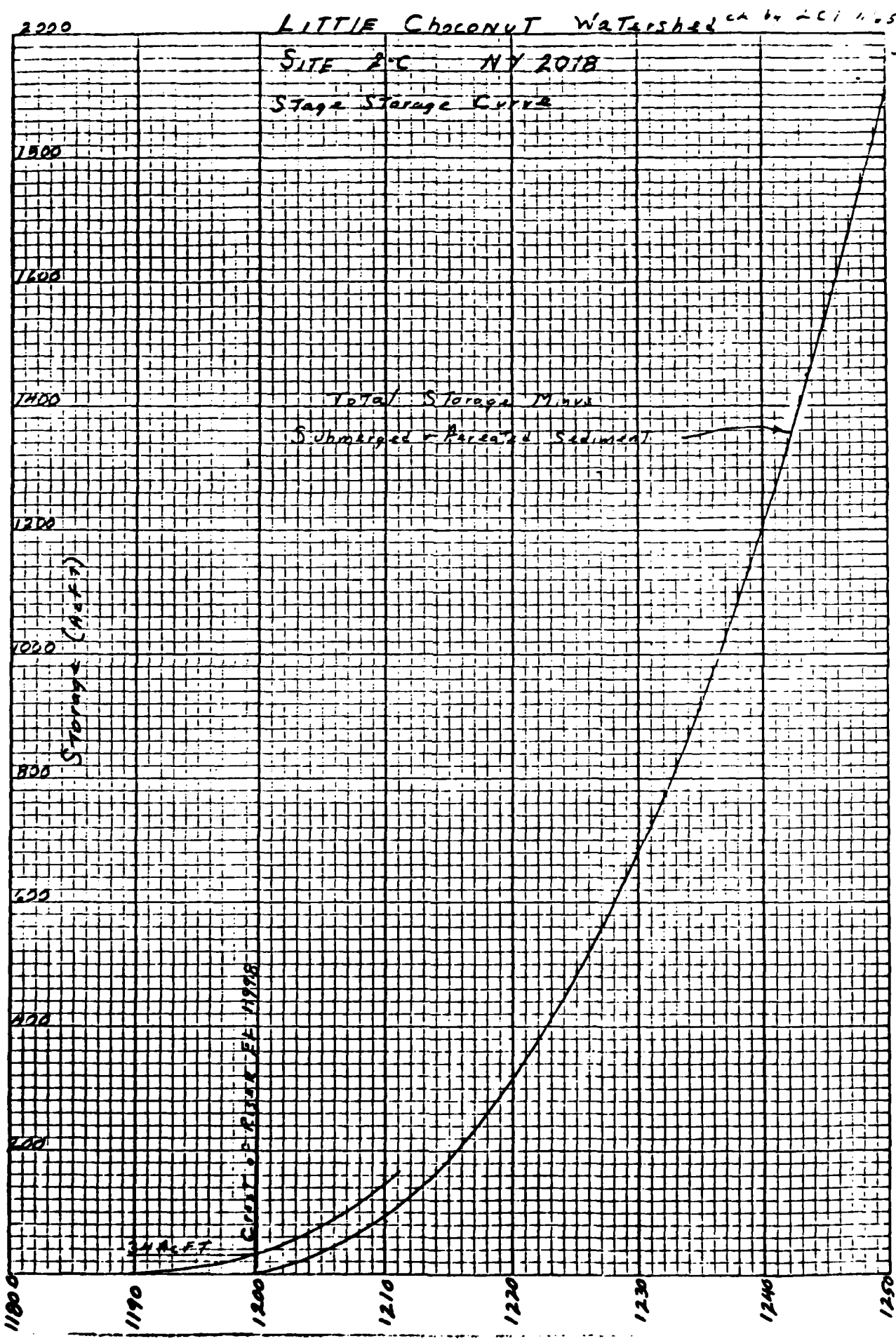
Stage Storage Computations

Area in Sq in = Planimeter Reading x 0.003827

Map Scale: 1" = 100' 1 sq in = 0.2296 Acres

Elev	Planimeter Reading	Area Acres	Σ Area Acres	Avg Area Acres	Diff. in Elev.	Vol Ac FT	Accum. Vol Ac FT	Accum. Vol. Minus Sediment
1184.0	0	.03					0	
			.03	.02	1.0	.02		
1185.0	38	.03					.02	
			1.14	.57	5.0	2.85		
1190.0	1256	1.11					2.87	
			4.17	~~2.08~~ 2.04	5.0	~~10.40~~ 10.20		
1195.0	3482	3.06					~~13.07~~ 13.27	
			8.93	4.47	5.0	22.35		
	Crest of RISER @ EL 1199.8							0
1200.0	6662	5.87					~~35.42~~ 35.62	1.28
			16.90	8.45	5.0	42.25		
1205.0	12,532	11.03					77.87	35.01
			27.99	13.95	5.0	69.75		
1210.0	19 272	16.96					~~147.42~~ 147.62	96.23
			41.07	20.54	5.0	102.70		
1215.0	27 386	24.11					250.32	190.41
			54.78	27.39	5.0	136.95		
1220.0	34 848	30.67					~~387.27~~ 387.27	318.84
			68.27	34.14	5.0	170.70		
1225.0	42 717	37.60					557.97	481.03
			83.39	41.69	5.0	208.45		
1230.0	52 026	45.79					~~766.22~~ 766.42	680.96
			98.84	49.42	5.0	247.10		
1235.0	60 266	53.05					~~1013.32~~ 1013.52	919.52
			119.27	57.14	5.0	285.70		
1240.0	69,553	61.22					~~1299.82~~ 1299.22	1205.22
			131.19	65.59	5.0	327.95		
1245.0	79 498	69.97					~~1626.97~~ 1627.17	1533.17
			149.89	74.95	5.0	374.75		
1250.0	90 801	79.92					2001.92	1907.72

8/19/65


LITTLE CHOCONUT Watershed
SITE 2-C NY 2018
Stage Storage Curve
2000
1500
1600
1700
1200
1000
800
600
400
200
Storage (AcFt)
Total Storage Mavd
Submerged + Retained Sediment
MARCH CROSS-SECTION 1998
1180
1190
1200
1210
1220
1230
1240
1250

SCS 523 REV 5-58

U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE New York | PROJECT Little Chocenut | Site 2 C
BY LEHmm | DATE 11/65 | CHECKED BY LCI | DATE 11/65 | JOB NO. NY-2018
SUBJECT Flow Constants | SHEET 4 OF 1

✓

Use a 30" pipe
Weir Flow Over Crest of Riser

$Q = C L H^{3/2}$

$Q = (3.1)\ (\pi 2.0)\ H^{3/2}$

$C = 3.1$
$L = 3D \times 2 = 15.0' - 2.0' = 13.0$ (center wall)
Refer to ES-151

$Q = 40.3\ H^{3/2}$

Pipe Flow For 30" pipe

$Q = CA\sqrt{2gh}$

$C = \frac{1}{\sqrt{2 + Kp\,Lp}}$

$Q = \frac{0.49}{} \times \frac{4.91}{} \times 8.02 h^{1/2}$

$C = \frac{1}{\sqrt{2 + .00786 \times 272}}$

$Q = 19.30\ h^{1/2}$

$C = \frac{1}{\sqrt{2 + 2.14}}$

$C = \frac{1}{2.04} = 0.49$

$Ap = 4.91$
$Lp = ~~272~~ 272'$
$n = 0.012$
$Kp = .00786$

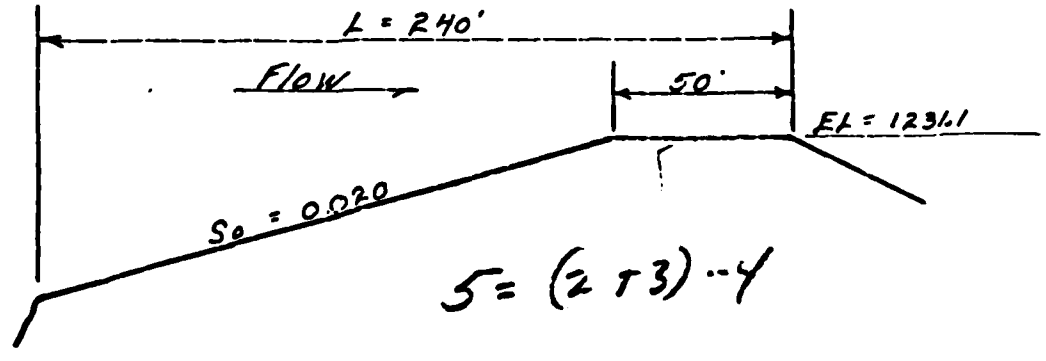
COMPUTATION SHEET
SCS-523 REV 5-58

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE New York | PROJECT Little Choconut Creek W.S. Site 2C
BY JFH | DATE 3/66 | CHECKED BY LCL | DATE 3/66 | JOB NO. NY-2018
SUBJECT q/b Vs Hp Computations (Emergency Spillway) | SHEET 4 OF 12

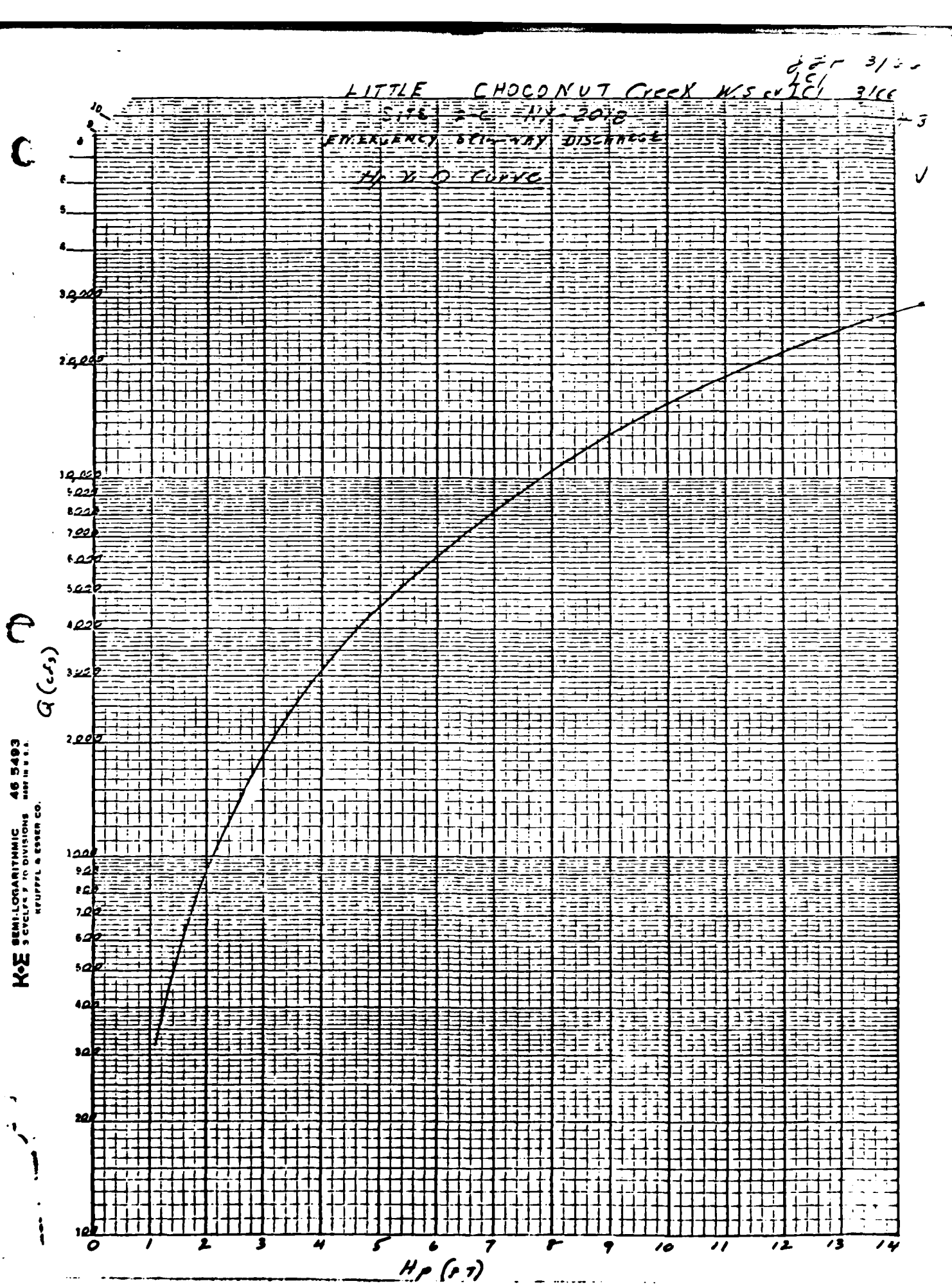
n = 0.040

1	2	3	4	5	6
EMERGENCY SPILLWAY L = 240'					b = ~~120~~ 160'
q/b	dx	V²/2g	So(L-50)	Hp	Q
2	4.89	0.00	3.80	1.09	320
4	5.42	0.01		1.63	640
6	5.83	0.02		2.05	960
8	6.20	0.02		2.42	~~1280~~ 1280
10	6.57	0.03		2.80	1600
15	~~7.45~~ 7.26	0.05		3.51	2400
20	7.79	0.08		4.07	3200
25	8.28	0.11		4.59	4000
30	8.81	0.13		5.14	4800
35	9.24	0.16		5.60	5600
40	9.73	0.18		6.11	6400
50	10.43	0.24		6.87	8000
60	11.12	0.31		7.63	9600
70	11.78	0.35		8.33	11,200
80	12.38	0.42		9.00	12800
90	12.89	0.48		9.57	14400
100	13.44	0.54		10.18	16000
120	14.48	0.64		11.32	19200
140	15.43	0.76		12.39	22400
160	16.36	0.83		13.39	25600
180	17.24	0.94		14.38	28800
200	18.05	1.02	3.80	15.27	32000



5 = (2 + 3) - 4

Ref TR 2-A Case 4


LITTLE CHOCONUT CREEK W.S. NO. 1
SITE 2-C HY-20.0
EMERGENCY SPILLWAY DISCHARGE
Hp VS Q CURVE
Q (cfs)
Hp (ft)
10
9
8
7
6
5
4
30,000
20,000
10,000
9000
8000
7000
6000
5000
4000
3000
2000
1000
900
800
700
600
500
400
300
200
100
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
KE SEMI-LOGARITHMIC 46 5493
3 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.

SCS 344 5-57
Tabular Computations

U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

JLR 3/66
LCI 3 66

4-4

LITTLE CHOCONUT CREEK WATERSHED

SITE 2-C

NY-2018

STAGE DISCHARGE COMPUTATIONS

	ELEV.	WEIR @ RISER 1/ H	WEIR @ RISER 1/ $H^{3/2}$	FLOW CREST 40.3 $H^{3/2}$	PIPE FLOW 2/ h	PIPE FLOW $h^{\frac{1}{2}}$	PIPE FLOW 19.30 $h^{\frac{1}{2}}$	EMERGENCY SPILLWAY FLOW Hp	EMERGENCY SPILLWAY FLOW Q	Q TOTAL
Riser Crest	1199.8	0	0	0						0
	1200.3	.5	.35	14.1						14
	1200.8	1.0	1.0	40.3	16.3	4.04	78			40
	1201.4	1.6	2.02	81.4	16.9	4.11	79			79
	1201.8	2.0	2.83	114	17.3	4.16	80			80
	1203.0				18.5	4.30	83			83
	1206.0				21.5	4.64	90			90
	1210.0				25.5	5.05	97			97
	1215.0				30.5	5.52	107			107
	1220.0				35.5	5.96	115			115
	1225.0				40.5	6.36	123			123
Crest of Emergency	1231.1				46.6	6.83	132	0	0	132
	1232.2				47.7	6.91	133	1.1	320	453
	1233.1				48.6	6.97	135	2.0	918	1053
	1234.1				49.6	7.04	136	3.0	1850	1986
	1235.0				50.5	7.11	137	3.9	3000	3137
	1236.1				51.6	7.18	139	5.0	4550	4719
	1237.5				53.0	7.28	141	6.4	6900	7041
	1238.7				54.2	7.36	142	7.6	9500	9642
	1240.0				55.5	7.45	144	8.9	12700	12844
	~~1241.1~~				~~56.6~~	~~7.52~~	~~145~~	~~10.0~~	~~15800~~	~~15945~~
	1242.5				58.0	7.62	147	11.4	19800	19947
	1243.7				59.2	7.69	148	12.6	23200	23348
	1245.0				60.5	7.78	150	13.9	27000	27150
	1247						153		33200	33350

1/ Riser Crest @Elev. 1199.8

2/ Invert of Pipe @Elev. 1180.0 ℄ Pipe @Elev. 1181.25

Assume Head Loss of 3.25 thru biff.

∴ Consider Water Surface @Elev. 1184.5

U. S. GOVERNMENT PRINTING OFFICE

SCS-523 REV 5-58

SOIL CONSERVATION SERVICE

STATE	PROJECT		
New York	Little Choconut Creek W.S. Site EC		
BY / DATE	CHECKED BY / DATE	JOB NO.	
LCL 3/66		NY-2018	

SUBJECT: Exit Channel Slope and Velocity Cem. Soil. SHEET 4 OF 5

Exit Channel Slope - Veg. Earth

$Q_{total} = 1950$ cfs

$Q_{pipe} = 136$ cfs

$Q_{em} = Q_{total} - Q_{pipe} = 1950 - 136 = 1814$ cfs

25% $Q_b = 0.25 \frac{1814}{160} = 2.83$ cfs

$\boxed{S_c = 0.028}$ (ES 98 3 of 4)

Velocity (V_c) in exit channel

$\frac{Q_{em}}{b} = \frac{1814}{160} = 11.3$ cfs

$\boxed{V_c = 7.8 \text{ fps}} < (7 \text{ fps} + 25\%) \therefore$ OK

V_c selected from Part 6 - V.D. Method of Reservoir Flood Routing

```
**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION      JULY 1978
  LAST MODIFICATION  25 SEP 78
**********
```

```
    1          A                                   NEW YORK C. OF E. PHASE 1 DAM INSPECTION
    2          A                                   LITTLE CHOCONUT DAM SITE 2-C
    3          A                                   FULL AND HALF PMF FLOOD ANALYSIS
    4          B    100       0        30        0        0        0        0        0        0        0
    5          B1     5
    6          J      1       2         1
    7          J1   0.5       1
    8          K      0       1                                    2                 1        0
    9          K1                                  INFLOW HYDROGRAPH
   10          H      1       1       3.5                       0        0                          1
   11          P      0      21       111      123      132      142
   12          T                                                                    1       .1             .007
   13          W   3.47     0.6
   14          X     47    -.15       1.5
   15          K      1       1                                    0        0        1        0
   16          K1                                  ROUTED HYDROGRAPH AT DAM  NO BREACH
   17          I                                            1        1
   18          Y1    20                                                    -1199.8       -1
   19          Y 1199.8  1231.1   1233.1   1235.0   1237.5   1238.7   1240.0   1242.5   1245.0   1247.0
   20          Y5     0     132     1053     3137     7041     9642    12844    19947    27150    33350
   21          $S     0      96      319      681     1205     1533
   22          $E1199.8  1210.0   1220.0   1230.0   1240.0   1245.0
   23          $$1199.8
   24          $D1241.0     2.7      1.5      600
   25          X     99
```

PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT	1
ROUTE HYDROGRAPH TO	1
END OF NETWORK	

```
**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION     JULY 1978
  LAST MODIFICATION  25 SEP 78
**********

RUN  DATE:24 AUG 1981

                                NEW YORK C. OF E. PHASE 1 DAM INSPECTION
                                LITTLE CHOCONUT DAM SITE 2-C
                                FULL AND HALF PMF FLOOD ANALYSIS

                                        JOB SPECIFICATION
      NO     NHR    NMIN    IDAY     IHR    IMIN   METRC    IPLT    IPRT   NSTAN
     100       0      30       0       0       0       0       0       0       0
                                   JOPER     NWT   LROPT   TRACE
                                       5       0       0       0

                                MULTI-PLAN ANALYSES TO BE PERFORMED
                                    NPLAN= 1 NRTIO= 2 LRTIO= 1
                          RTIOS=    0.50    1.00

**********          **********          **********          **********          **********

                                SUB-AREA RUNOFF COMPUTATION

                                INFLOW HYDROGRAPH

                              ISTAQ   ICOMP   IECON   ITAPE    JPLT    JPRT   INAME  ISTAGE   IAUTO
                                  1       0       0       0       2       0       1       0       0

                                HYDROGRAPH DATA
      IHYDG    IUNG    TAREA    SNAP   TRSDA   TRSPC   RATIO   ISNOW   ISAME   LOCAL
          1       1     3.50     0.0    3.50     0.0     0.0       0       1       0

                                PRECIP DATA
                          SPFE     PMS      R6     R12     R24     R48     R72     R96
                           0.0   21.00  111.00  123.00  132.00  142.00     0.0     0.0
TRSPC COMPUTED BY THE PROGRAM IS 0.800

                                LOSS DATA
      LROPT   STRKR   DLTKR   RTIOL   ERAIN   STRKS   RTIOK   STRTL   CNSTL   ALSMX   RTIMP
          0     0.0     0.0    1.00     0.0     0.0    1.00    1.00    0.10     0.0    0.01

                                UNIT HYDROGRAPH DATA
                                TP=  3.47    CP=0.60    NTA=  0

                                RECESSION DATA
                                STRTQ=   47.00    QRCSN=   -0.15    RTIOR= 1.50
APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 7.80 AND R= 6.84 INTERVALS

                UNIT HYDROGRAPH 41 END-OF-PERIOD ORDINATES, LAG=   3.49 HOURS, CP= 0.61  VOL= 1.00
      20.     74.    147.    231.    309.    367.    396.    390.    352.    304.
     262.    227.    196.    169.    146.    126.    109.     94.     81.     70.
      61.     52.     45.     39.     34.     29.     25.     22.     19.     16.
```

14. 12. 10. 9. 8. 7. 6. 5. 4. 4.
3.

END-OF-PERIOD FLOW

NO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	NO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	0.30	1	0.00	0.00	0.00	45.	1.02	1.30	51	0.05	0.00	0.05	38.
1.01	1.00	2	0.00	0.00	0.00	43.	1.02	2.00	52	0.05	0.00	0.05	33.
1.01	1.30	3	0.00	0.00	0.00	42.	1.02	2.30	53	0.05	0.00	0.05	30.
1.01	2.00	4	0.00	0.00	0.00	40.	1.02	3.00	54	0.05	0.00	0.05	26.
1.01	2.30	5	0.00	0.00	0.00	38.	1.02	3.30	55	0.05	0.00	0.05	24.
1.01	3.00	6	0.00	0.00	0.00	37.	1.02	4.00	56	0.05	0.00	0.05	22.
1.01	3.30	7	0.00	0.00	0.00	35.	1.02	4.30	57	0.05	0.00	0.05	21.
1.01	4.00	8	0.00	0.00	0.00	34.	1.02	5.00	58	0.05	0.00	0.05	21.
1.01	4.30	9	0.00	0.00	0.00	33.	1.02	5.30	59	0.05	0.00	0.05	20.
1.01	5.00	10	0.00	0.00	0.00	31.	1.02	6.00	60	0.05	0.00	0.05	19.
1.01	5.30	11	0.00	0.00	0.00	30.	1.02	6.30	61	0.17	0.12	0.05	18.
1.01	6.00	12	0.00	0.00	0.00	29.	1.02	7.00	62	0.17	0.12	0.05	24.
1.01	6.30	13	0.01	0.00	0.01	28.	1.02	7.30	63	0.17	0.12	0.05	40.
1.01	7.00	14	0.01	0.00	0.01	27.	1.02	8.00	64	0.17	0.12	0.05	66.
1.01	7.30	15	0.01	0.00	0.01	26.	1.02	8.30	65	0.17	0.12	0.05	102.
1.01	8.00	16	0.01	0.00	0.01	25.	1.02	9.00	66	0.17	0.12	0.05	145.
1.01	8.30	17	0.01	0.00	0.01	24.	1.02	9.30	67	0.17	0.12	0.05	191.
1.01	9.00	18	0.01	0.00	0.01	23.	1.02	10.00	68	0.17	0.12	0.05	236.
1.01	9.30	19	0.01	0.00	0.01	22.	1.02	10.30	69	0.17	0.12	0.05	277.
1.01	10.00	20	0.01	0.00	0.01	21.	1.02	11.00	70	0.17	0.12	0.05	312.
1.01	10.30	21	0.01	0.00	0.01	20.	1.02	11.30	71	0.17	0.12	0.05	343.
1.01	11.00	22	0.01	0.00	0.01	20.	1.02	12.00	72	0.17	0.12	0.05	369.
1.01	11.30	23	0.01	0.00	0.01	19.	1.02	12.30	73	0.93	0.88	0.05	407.
1.01	12.00	24	0.01	0.00	0.01	18.	1.02	13.00	74	0.93	0.88	0.05	482.
1.01	12.30	25	0.07	0.00	0.07	17.	1.02	13.30	75	1.12	1.07	0.05	616.
1.01	13.00	26	0.07	0.00	0.07	17.	1.02	14.00	76	1.12	1.07	0.05	820.
1.01	13.30	27	0.08	0.00	0.08	16.	1.02	14.30	77	1.40	1.35	0.05	1103.
1.01	14.00	28	0.08	0.00	0.08	16.	1.02	15.00	78	1.40	1.35	0.05	1458.
1.01	14.30	29	0.11	0.00	0.11	15.	1.02	15.30	79	1.70	1.65	0.05	1875.
1.01	15.00	30	0.11	0.00	0.11	15.	1.02	16.00	80	5.39	5.34	0.05	2410.
1.01	15.30	31	0.13	0.00	0.13	14.	1.02	16.30	81	1.31	1.26	0.05	3081.
1.01	16.00	32	0.41	0.23	0.18	19.	1.02	17.00	82	1.31	1.26	0.05	3807.
1.01	16.30	33	0.10	0.05	0.05	32.	1.02	17.30	83	1.03	0.98	0.05	4525.
1.01	17.00	34	0.10	0.05	0.05	52.	1.02	18.00	84	1.03	0.98	0.05	5158.
1.01	17.30	35	0.08	0.03	0.05	77.	1.02	18.30	85	0.08	0.03	0.05	5608.
1.01	18.00	36	0.08	0.03	0.05	104.	1.02	19.00	86	0.08	0.03	0.05	5814.
1.01	18.30	37	0.01	0.00	0.01	128.	1.02	19.30	87	0.08	0.03	0.05	5740.
1.01	19.00	38	0.01	0.00	0.01	146.	1.02	20.00	88	0.08	0.03	0.05	5406.
1.01	19.30	39	0.01	0.00	0.01	153.	1.02	20.30	89	0.08	0.03	0.05	4933.
1.01	20.00	40	0.01	0.00	0.01	148.	1.02	21.00	90	0.08	0.03	0.05	4416.
1.01	20.30	41	0.01	0.00	0.01	137.	1.02	21.30	91	0.08	0.03	0.05	3890.
1.01	21.00	42	0.01	0.00	0.01	123.	1.02	22.00	92	0.08	0.03	0.05	3389.
1.01	21.30	43	0.01	0.00	0.01	109.	1.02	22.30	93	0.08	0.03	0.05	2944.
1.01	22.00	44	0.01	0.00	0.01	96.	1.02	23.00	94	0.08	0.03	0.05	2559.
1.01	22.30	45	0.01	0.00	0.01	83.	1.02	23.30	95	0.08	0.03	0.05	2226.
1.01	23.00	46	0.01	0.00	0.01	73.	1.03	0.0	96	0.08	0.03	0.05	1939.
1.01	23.30	47	0.01	0.00	0.01	64.	1.03	0.30	97	0.0	0.0	0.0	1690.
1.02	0.0	48	0.01	0.00	0.01	56.	1.03	1.00	98	0.0	0.0	0.0	1474.
1.02	0.30	49	0.05	0.00	0.05	49.	1.03	1.30	99	0.0	0.0	0.0	1285.
1.02	1.00	50	0.05	0.00	0.05	43.	1.03	2.00	100	0.0	0.0	0.0	1119.
									SUM	23.86	20.18	3.67	85063.
										(606.)	(513.)	(93.)	(2408.72)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5814.	4641.	1707.	845.	84480.
CMS	165.	131.	48.	24.	2392.

INCHES	12.34	18.15	18.71	18.71
MM	313.34	460.96	475.26	475.26
AC-FT	2302.	3386.	3491.	3491.

THOUS CU M	2839.	4176.	4306.	4306.

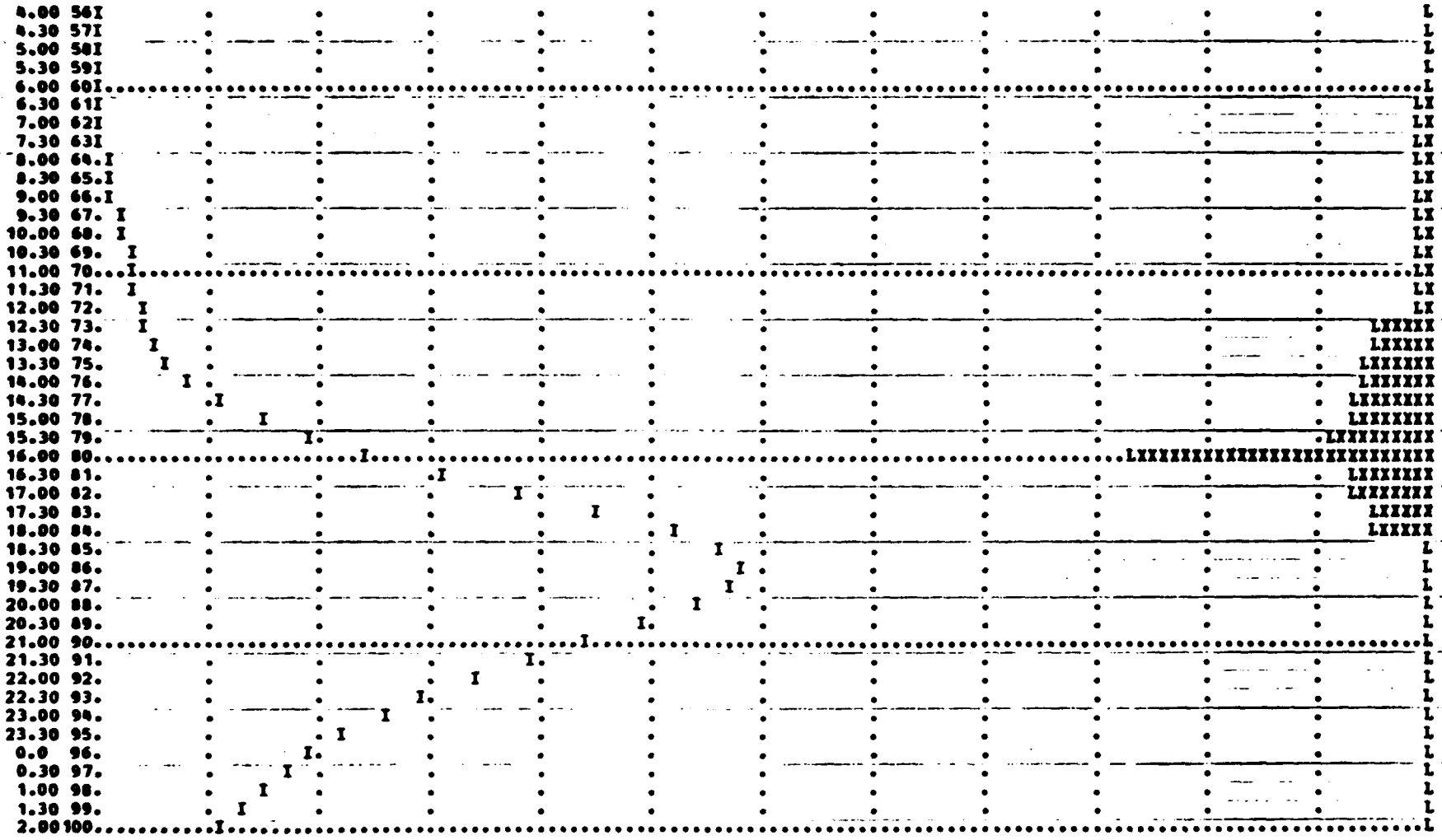
OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

	0.	1000.	2000.	3000.	4000.	5000.	6000.	0.	0.	0.	0.	0.	0.
											PRECIP(L) AND EXCESS(X)		
	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.	4.	2.	0.
0.30	1I												L
1.00	2I												L
1.30	3I												L
2.00	4I												L
2.30	5I												L
3.00	6I												L
3.30	7I												L
4.00	8I												L
4.30	9I												L
5.00	10I												L
5.30	11I												L
6.00	12I												L
6.30	13I												L
7.00	14I												L
7.30	15I												L
8.00	16I												L
8.30	17I												L
9.00	18I												L
9.30	19I												L
10.00	20I												L
10.30	21I												L
11.00	22I												L
11.30	23I												L
12.00	24I												L
12.30	25I												L
13.00	26I												L
13.30	27I												L
14.00	28I												L
14.30	29I												LX
15.00	30I												LX
15.30	31I												LX
16.00	32I												LXX
16.30	33I												L
17.00	34.I												L
17.30	35.I												L
18.00	36.I												L
18.30	37.I												L
19.00	38.I												L
19.30	39. I												L
20.00	40.I												L
20.30	41.I												L
21.00	42.I												L
21.30	43.I												L
22.00	44.I												L
22.30	45.I												L
23.00	46.I												L
23.30	47.I												L
0.0	48.I												L
0.30	49I												L
1.00	50I												L
1.30	51I												L
2.00	52I												L

```
2.30 53I
3.00 54I
3.30 55I
```


4.00 56
4.30 57
5.00 58
5.30 59
6.00 60
6.30 61
7.00 62
7.30 63
8.00 64.
8.30 65.
9.00 66.
9.30 67.
10.00 68.
10.30 69.
11.00 70.
11.30 71.
12.00 72.
12.30 73.
13.00 74.
13.30 75.
14.00 76.
14.30 77.
15.00 78.
15.30 79.
16.00 80.
16.30 81.
17.00 82.
17.30 83.
18.00 84.
18.30 85.
19.00 86.
19.30 87.
20.00 88.
20.30 89.
21.00 90.
21.30 91.
22.00 92.
22.30 93.
23.00 94.
23.30 95.
0.0 96.
0.30 97.
1.00 98.
1.30 99.
2.00 100

OVE

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 1

23.	22.	21.	20.	19.	18.	18.	17.	16.	16.
15.	14.	14.	13.	13.	12.	12.	11.	11.	11.
10.	10.	9.	9.	9.	8.	8.	8.	8.	7.
7.	9.	16.	26.	39.	52.	64.	73.	76.	74.
68.	62.	55.	48.	42.	36.	32.	28.	24.	21.
19.	17.	15.	13.	12.	11.	11.	10.	10.	9.
9.	12.	20.	33.	51.	72.	95.	118.	139.	156.
171.	185.	203.	241.	308.	410.	551.	729.	937.	1205.
1541.	1903.	2262.	2579.	2804.	2907.	2870.	2703.	2466.	2208.
1945.	1695.	1472.	1279.	1113.	970.	845.	737.	643.	560.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2907.	2321.	854.	422.	42240.
CMS	82.	66.	24.	12.	1196.
INCHES		6.17	9.07	9.36	9.36
MM		156.67	230.48	237.63	237.63
AC-FT		1151.	1693.	1745.	1745.
THOUS CU M		1419.	2088.	2153.	2153.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 2

45.	43.	42.	40.	38.	37.	35.	34.	33.	31.
30.	29.	28.	27.	26.	25.	24.	23.	22.	21.
20.	20.	19.	18.	17.	17.	16.	16.	15.	15.
14.	19.	32.	52.	77.	104.	128.	146.	153.	148.
137.	123.	109.	96.	83.	73.	64.	56.	49.	43.
38.	33.	30.	26.	24.	22.	21.	21.	20.	19.
18.	24.	40.	66.	102.	145.	191.	236.	277.	312.
343.	369.	407.	482.	616.	820.	1103.	1458.	1875.	2410.
3081.	3807.	4525.	5158.	5608.	5814.	5740.	5406.	4933.	4416.
3890.	3389.	2944.	2559.	2226.	1939.	1690.	1474.	1285.	1119.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5814.	4641.	1707.	845.	84480.
CMS	165.	131.	48.	24.	2392.
INCHES		12.34	18.15	18.71	18.71
MM		313.34	460.96	475.26	475.26
AC-FT		2302.	3386.	3491.	3491.
THOUS CU M		2839.	4176.	4306.	4306.

********** ********** ********** ********** **********

HYDROGRAPH ROUTING

ROUTED HYDROGRAPH AT DAM NO BREACH

ISTAQ	ICONP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	1	0	0	0	0	1	0	0

ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.0	0.0	1	1	0	0	0

NSTPS	NSTDL	LAG	ANSKK	X	TSK	STORA	ISPRAT
20	0	0	0.0	0.0	0.0	-1200.	-1

STAGE	1199.80	1231.10	1233.10	1235.00	1237.50	1238.70	1240.00	1242.50	1245.00	1247.00
FLOW	0.0	132.00	1053.00	3137.00	7041.00	9642.00	12844.00	19947.00	27150.00	33350.00
CAPACITY=	0.	96.	319.	681.	1205.	1533.				
ELEVATION=	1200.	1210.	1220.	1230.	1240.	1245.				

CREL	SPWID	COQW	EXPW	ELEVL	COQL	CAREA	EXPL
1199.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DAM DATA

TOPEL	COQD	EXPD	DAMWID
1241.0	2.7	1.5	600.

STATION 1, PLAN 1, RATIO 1

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	1.	1.	2.	2.	2.	2.	3.	3.	3.
3.	4.	4.	4.	4.	4.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	6.
6.	6.	6.	6.	6.	7.	8.	9.	10.	12.
13.	14.	15.	15.	16.	16.	16.	17.	17.	17.
17.	17.	17.	17.	17.	17.	17.	17.	16.	16.
16.	16.	16.	16.	17.	18.	19.	20.	22.	25.
27.	30.	33.	36.	41.	45.	48.	53.	59.	67.
77.	88.	97.	109.	121.	136.	982.	2003.	2354.	2344.
2182.	1963.	1734.	1518.	1324.	1153.	1028.	956.	874.	790.

STORAGE

1.	2.	3.	3.	4.	5.	6.	6.	7.	7.
8.	8.	9.	9.	9.	10.	10.	10.	11.	11.
11.	11.	11.	12.	12.	12.	12.	12.	12.	12.
12.	13.	13.	13.	14.	16.	18.	21.	23.	26.
28.	31.	32.	34.	35.	36.	37.	37.	38.	38.
38.	38.	38.	38.	38.	38.	37.	37.	37.	36.
36.	36.	36.	36.	37.	39.	42.	46.	50.	55.
61.	67.	74.	81.	91.	104.	122.	147.	179.	220.
274.	342.	424.	520.	626.	739.	835.	889.	906.	905.
897.	887.	876.	866.	856.	848.	841.	832.	823.	814.

STAGE

1199.9	1200.0	1200.1	1200.2	1200.2	1200.3	1200.4	1200.5	1200.5	1200.6
1200.6	1200.7	1200.7	1200.8	1200.8	1200.8	1200.9	1200.9	1200.9	1201.0
1201.0	1201.0	1201.0	1201.0	1201.1	1201.1	1201.1	1201.1	1201.1	1201.1
1201.1	1201.1	1201.2	1201.2	1201.3	1201.5	1201.7	1202.0	1202.3	1202.6
1202.8	1203.0	1203.2	1203.4	1203.5	1203.6	1203.7	1203.8	1203.8	1203.8
1203.8	1203.8	1203.8	1203.8	1203.8	1203.8	1203.8	1203.7	1203.7	1203.7
1203.6	1203.6	1203.6	1203.7	1203.8	1204.0	1204.3	1204.6	1205.1	1205.7
1206.3	1206.9	1207.6	1208.5	1209.5	1210.4	1211.2	1212.3	1213.7	1215.6
1218.0	1220.6	1222.9	1225.6	1228.5	1231.1	1232.9	1234.0	1234.3	1234.3
1234.1	1233.9	1233.7	1233.5	1233.3	1233.2	1233.0	1232.9	1232.7	1232.5

PEAK OUTFLOW IS 2354. AT TIME 44.50 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2354.	1624.	463.	226.	22575.

CMS	67.	46.	13.	6.	639.
INCHES		4.32	4.92	5.00	5.00
MM		109.63	124.91	127.00	127.00

AC-FT	805.	918.	933.	933.
THOUS CU M	993.	1132.	1151.	1151.

STATION 1, PLAN 1, RATIO 2

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

1.	2.	2.	3.	4.	4.	5.	5.	6.	6.
7.	7.	8.	8.	8.	9.	9.	9.	10.	10.
10.	10.	10.	10.	11.	11.	11.	11.	11.	11.
11.	11.	11.	12.	13.	14.	16.	18.	21.	23.
25.	27.	29.	30.	31.	32.	33.	33.	34.	34.
34.	34.	34.	34.	34.	34.	33.	33.	33.	33.
32.	32.	32.	33.	34.	35.	38.	41.	44.	46.
48.	50.	53.	56.	60.	65.	72.	81.	90.	100.
113.	128.	1048.	3385.	4908.	5520.	5716.	5607.	5274.	4817.
4311.	3799.	3317.	2938.	2609.	2291.	2003.	1749.	1526.	1331.

STORAGE

2.	4.	5.	7.	8.	10.	11.	12.	13.	14.
15.	16.	17.	18.	19.	19.	20.	21.	21.	22.
22.	23.	23.	23.	24.	24.	24.	24.	24.	25.
25.	25.	26.	27.	29.	32.	36.	41.	47.	52.
57.	61.	65.	68.	70.	72.	74.	75.	75.	76.
76.	76.	76.	76.	75.	75.	75.	74.	74.	73.
72.	72.	72.	73.	75.	79.	84.	91.	100.	110.
122.	135.	149.	165.	185.	212.	249.	299.	364.	449.
558.	695.	843.	951.	1002.	1023.	1030.	1026.	1015.	999.
982.	965.	949.	933.	918.	903.	889.	877.	866.	857.

STAGE

1200.0	1200.2	1200.4	1200.5	1200.7	1200.8	1201.0	1201.1	1201.2	1201.3
1201.4	1201.5	1201.6	1201.7	1201.8	1201.9	1201.9	1202.0	1202.1	1202.1
1202.2	1202.2	1202.2	1202.3	1202.3	1202.3	1202.4	1202.4	1202.4	1202.4
1202.4	1202.5	1202.5	1202.7	1202.9	1203.2	1203.7	1204.2	1204.8	1205.3
1205.8	1206.3	1206.7	1207.0	1207.3	1207.5	1207.6	1207.7	1207.8	1207.9
1207.9	1207.9	1207.9	1207.9	1207.8	1207.8	1207.7	1207.7	1207.6	1207.6
1207.5	1207.4	1207.4	1207.5	1207.8	1208.1	1208.7	1209.5	1210.2	1210.6
1211.2	1211.7	1212.4	1213.1	1214.0	1215.2	1216.9	1219.1	1221.2	1223.6
1226.6	1230.3	1233.1	1235.2	1236.1	1236.5	1236.7	1236.6	1236.4	1236.1
1235.8	1235.4	1235.1	1234.8	1234.5	1234.2	1234.0	1233.7	1233.5	1233.4

PEAK OUTFLOW IS 5716. AT TIME 43.50 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5716.	4304.	1314.	638.	63792.
CMS	162.	122.	37.	18.	1806.
INCHES		11.44	13.96	14.13	14.13
MM		290.58	354.70	358.88	358.88
AC-FT		2134.	2605.	2636.	2636.
THOUS CU M		2633.	3214.	3252.	3252.

PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS	
				RATIO 1 0.50	RATIO 2 1.00
HYDROGRAPH AT	1	3.50	1	2907.	5814.
	(	9.07)	(	82.32)(	164.63)(
ROUTED TO	1	3.50	1	2354.	5716.
	(	9.07)	(	66.67)(	161.85)(

1

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1199.80	1199.80	1241.00
STORAGE	0.	0.	1271.
OUTFLOW	0.	0.	15685.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
0.50	1234.29	0.0	906.	2354.	0.0	44.50	0.0
1.00	1236.65	0.0	1030.	5716.	0.0	43.50	0.0

APPENDIX D

STABILITY COMPUTATIONS

Form SCS 357
Rev. 6-65

MATERIALS TESTING REPORT

U. S. DEPARTMENT of AGRICULTURE
SOIL CONSERVATION SERVICE

SUMMARY - SLOPE STABILITY ANALYSIS

PROJECT and STATE: LITTLE CHOCONUT CREEK #2-C NEW YORK

DATE: 12-29-65

METHOD OF ANALYSIS: S... CIRCLE

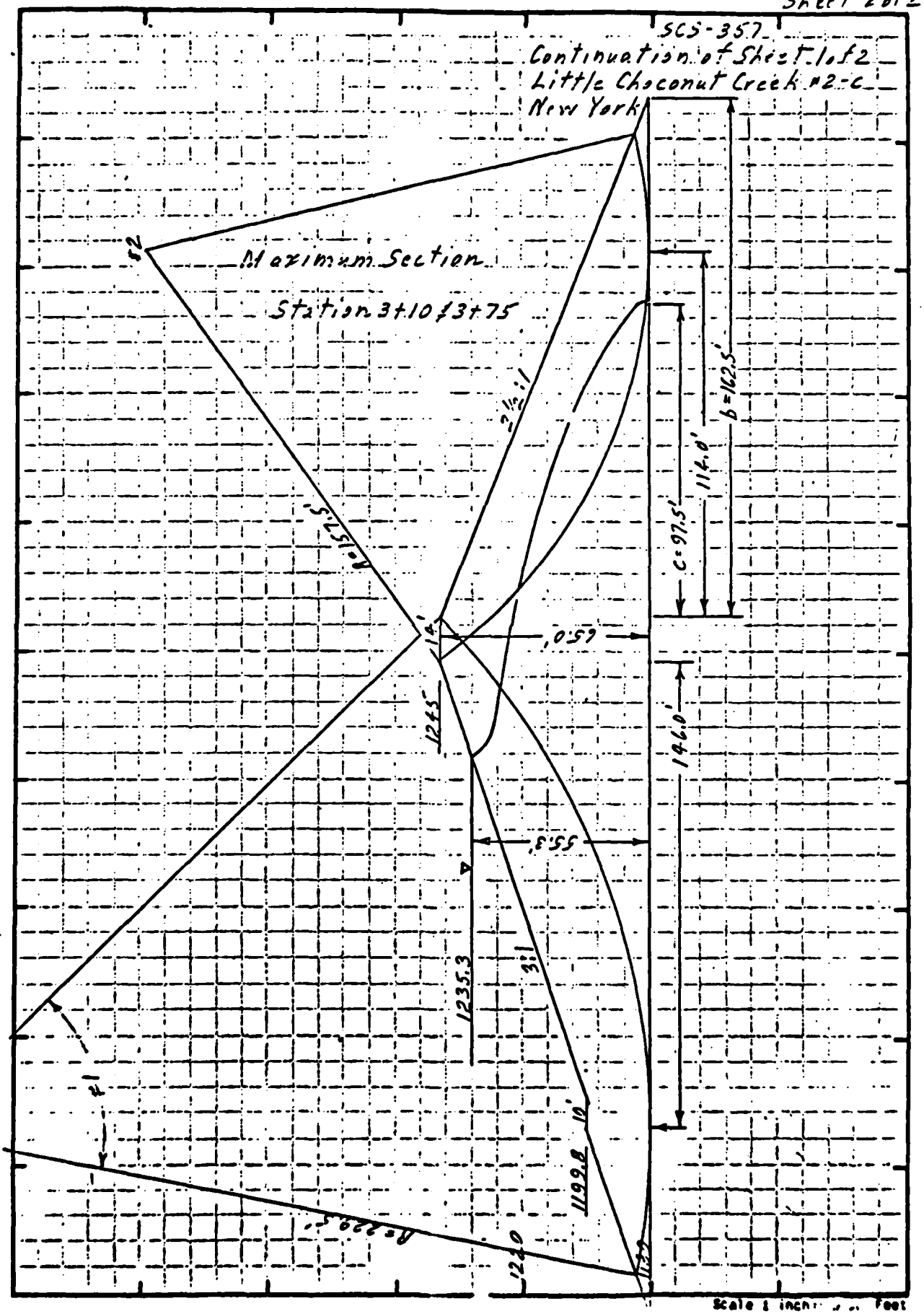
ANALYZED AT: S.M.L. LINCOLN

APPROVED BY:

	SOURCE AND USE OF MATERIALS	CLASSIFICATION	γ_d (pcf)	γ_m (pcf)	γ_{sat} (pcf)	γ_{sub} (pcf)	ϕ (deg.)	tan ϕ	c (psf)	REMARKS
			ADOPTED DESIGN DATA							
①	Emer. Spillway Embankment	GC-GM	129.0	140.0	144.5	82.0	39.5°	0.437	150	← CU
②	Emer. Spillway Embankment	GC-GM	129.0	140.0	144.5	82.0	36.5°	0.740	0	← $\overline{CU}$
③										Saturated shear values
④										
⑤										
⑥										
⑦										
⑧										

TRIAL NO.	SLOPE	CONDITIONS	F_s
		Maximum Section — Upstream Slope	
1	3:1	Full drawdown - 10' berm @ elev. 1199.8 - Arc cut from app. sl'd'r thru Emb. #1 only	1.53
		Downstream Slope	
2	2½:1	Drain S/h = 0.6 - No berm - Arc cut from app. sl'd'r thru Emb. #1 only	1.86
	3:1	Upstream - Infinite Slope Method - Rapid Drawdown - Horizontal Flow	1.03

SCS-357
Continuation of Sheet 1 of 2
Little Choconut Creek #2-C
New York



Form SCS-355 Rev. 4/60

September 20, 1965

Height = 61.8' Class = C

106,328 Cubic Yards Floodwater Retarding

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL MECHANICS LABORATORY DATA, Sheet 1 of 1

Little Choconut Creek, Site No. 2-C

Laboratory Sample Number (66W)	Field Number	Location and Description	Depth	Field Classification	Fines .002 mm	Fines .005	Fines [illegible]	Fines .05	Sands #200 .074	Sands #140 .105	Sands #60 .250	Sands #40 .42	Sands #20 .84	Sands #10 2.0	Sands #4 4.76	Gravel 3/8" 9.525	Gravel 1/2" 12.7	Gravel 3/4" 19.05	Gravel 1" 25.4	Gravel 1 1/2" 38.1	Gravel 3" 76.2	Atterberg Limits LL	Atterberg Limits PI	Unified Classification	Soluble Salts %	Dispersion %	Moisture-Density Curve No.	Dry Density lbs/ft³	Optimum H_2O %	Undisturbed Dry Unit Weight pcf	Undisturbed H_2O %	G_s	Special Tests
940	201.1	Emer. Spw. L. Bag	2-10'	GM	6	12	25	32	40	41	42	43	47	52	69	78	82	88	91	96	100	24	5	GC-GM		25						2.70	Minus #4 fraction ✓
																						DRY DENSITY		≤ #4 (3/4")	MATERIAL		1X	124.0	9.5	Gravel fraction		2.73	Apparent
																																2.57	Bulk, dry 160.4 p.c.f.
																																2.2	% Absorption
941	205.1	Emer. Spw. L. Bag	2-13'	GM	8	16	28	37	43	43	45	45	49	53	66	74	77	82	85	89	97	27	6	GC-GM		25						2.69	Minus #4 fraction
																						DRY DENSITY		≤ #4 (3/4")	MATERIAL		2X	122.0	11.0	Gravel fraction		2.74	Apparent
																																2.59	Bulk, dry 161.6 p.c.f.
																																2.0	% Absorption
942	207.1	Emer. Spw. L. Bag	2-10'	GM	8	15	26	31	36	37	38	39	44	50	59	68	72	78	83	90	100	25	5	GC-GM		31						2.71	Minus #4 fraction
																						DRY DENSITY		≤ #4 (3/4")	MATERIAL		3X	129.0	9.0	Gravel fraction		2.72	Apparent
																																2.59	Bulk, dry
																																2.0	% Absorption

Form SCS 355A
Rev. 6-65

LABORATORY NO. 66M1940

MATERIALS TESTING REPORT	U. S. DEPARTMENT of AGRICULTURE SOIL CONSERVATION SERVICE	TRIAXIAL SHEAR TEST

PROJECT and STATE: LITTLE CHOCONUT CREEK #2C NEW YORK
SAMPLE LOCATION: EMERGENCY SPILLWAY
FIELD SAMPLE NO.: 201.1
DEPTH: 2.0' - 10.0'
GEOLOGIC ORIGIN: Glacial Till
TYPE OF SAMPLE: DISTURBED
TESTED AT: LINCOLN
APPROVED BY: LPD
DATE: 11-5-65

INDEX TEST DATA

USCS GC GM ; LL 24 ; PI 5
% FINER (mm): 0.002 6 : 0.005 12
0.074 (#200) 40
G_s (-#4) 2.70 ; G_s (+#4) 2.73
STANDARD: γ_d MAX. 116.5 pcf; w_o 11.5 %
MODIFIED: γ_d MAX. _____ pcf w_o _____ %

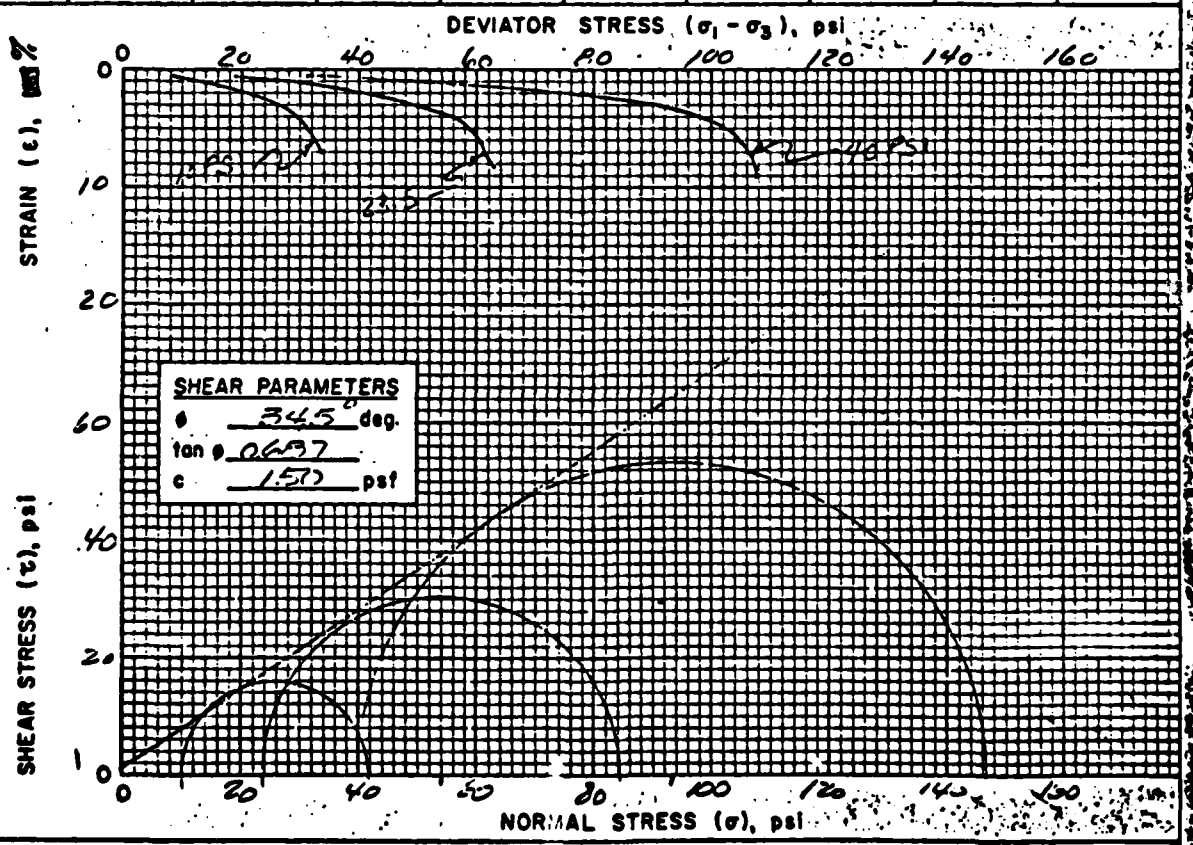
SPECIMEN DATA

HEIGHT 8.0 "; DIAMETER 4.0 "
MATERIALS TESTED PASSED 3/4" SIEVE
METHOD OF PREPARATION STATIC MOLDED IN 4 LIFTS
MOLDING MOISTURE 13.7 %
MOLDED AT ____ % OF γ_d MAXIMUM

TYPE OF TEST

UU ☐
CU ☐
$\overline{CU}$ ☑
CD ☐

DRY DENSITY			MOISTURE CONTENT, %			TIME OF CONSOLIDATION (hrs.)	MINOR PRINCIPAL STRESS σ_3 (psi)	DEVIATOR STRESS $\sigma_1 - \sigma_3$ (psi)	AXIAL STRAIN AT FAILURE, (%)
INITIAL pcf ☑ g/cc ☐	CONSOLIDATED pcf ☑ g/cc ☐		START OF TEST	DEG. OF SAT. AT START OF TEST	END OF TEST				
121.7	122.6		13.7	95.1	12.9	16.83	10	31.7	5.0
123.0	126.1		13.9	100.0	12.6	67.83	23.5	60.9	6.1
123.0	125.5		13.5	97.1	12.5	64.25	40	106.5	7.0



REMARKS

Form SCS 355B
6-65

LABORATORY NO 64-1940

MATERIALS TESTING REPORT	U. S. DEPARTMENT of AGRICULTURE SOIL CONSERVATION SERVICE	TRIAXIAL SHEAR TEST with pore pressure measured

PROJECT and STATE: LITTLE [illegible] CREEK NO. 2C NEW YORK

SAMPLE LOCATION: EMERGENCY SPILL WAY

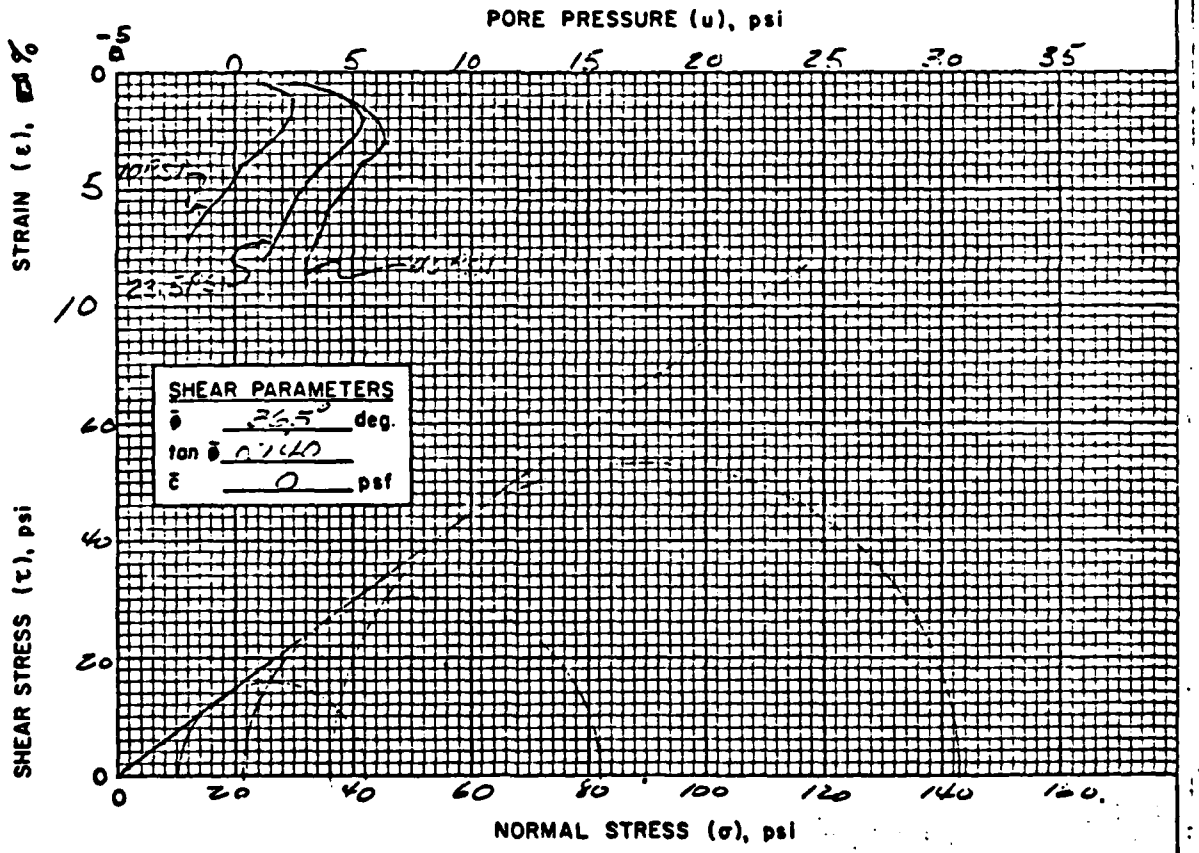
TYPE OF SAMPLE:

TESTED AT: SML LINCOLN

APPROVED BY: LPD

DATE: 11-5-65

MINOR PRINCIPAL STRESS, σ_3 (psi)	PORE PRESSURE, u (psi)	EFFECTIVE MINOR PRINCIPAL STRESS, $\bar{\sigma}_3$ (psi)	DEVIATOR STRESS, $\sigma_1 - \sigma_3$ (psi)	FAILURE CRITERIA	STRAIN AT FAILURE, ε (%)
10	-0.3	10.3	317	Maximum Stress Ratio	5.0
15	2.3	12.7	609		6.1
20	3.6	16.4	1054		7.0



REMARKS

Form SCS 332
Rev. 3-65

LABORATORY NO 66W990

MATERIALS TESTING REPORT	U. S. DEPARTMENT of AGRICULTURE SOIL CONSERVATION SERVICE	COMPACTION AND PENETRATION RESISTANCE

PROJECT and STATE: Little Choconut Creek #2-C New York

FIELD SAMPLE NO	LOCATION	DEPTH
201.1	Emergency Spillway	2'-10'

GEOLOGIC ORIGIN	TESTED AT	APPROVED BY	DATE
Glacial Till	SML Lincoln	LPD	11-5-65

CLASSIFICATION GC-GM LL 21 PI 5

MAX. PARTICLE SIZE INCLUDED IN TEST < 3/4" "

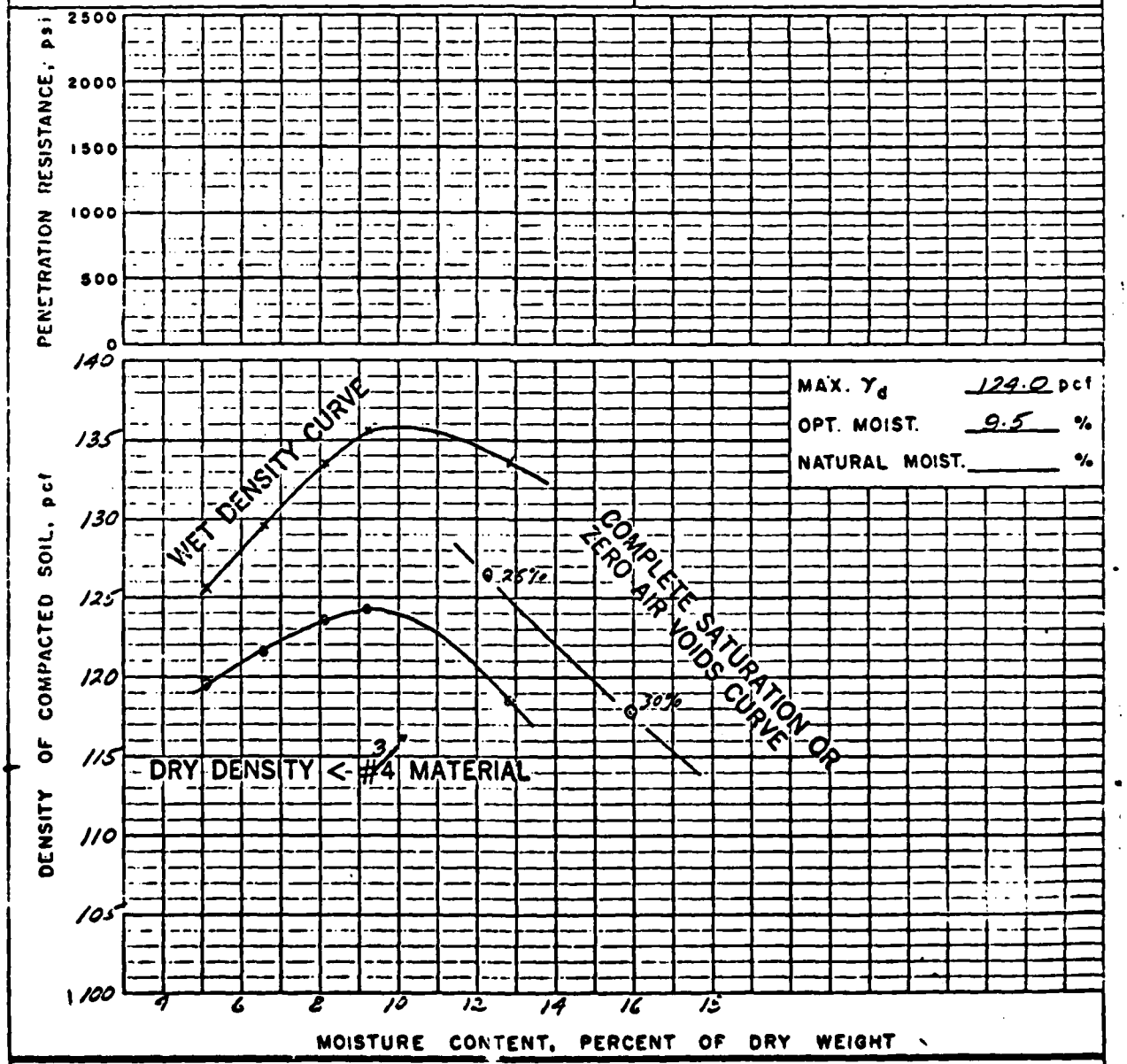
SPECIFIC GRAVITY (G_s) { MINUS NO. 4 2.70 / PLUS NO. 4 2.73

CURVE NO. 1x OF 3x

STD. (ASTM D-698) ☒; METHOD C

MOD. (ASTM D-1557) ☐; METHOD

OTHER TEST ☐ (SEE REMARKS)



REMARKS

Form SCS 352
Rev. 5-63

LABORATORY NO. 66N941

MATERIALS TESTING REPORT	U. S. DEPARTMENT of AGRICULTURE SOIL CONSERVATION SERVICE	COMPACTION AND PENETRATION RESISTANCE

PROJECT OR STATE: Little Chocorua Creek "2-C" New York

FIELD SAMPLE NO.	LOCATION	DEPTH
205.1	Emergency Spillway	2'-13'

GEOLOGIC ORIGIN	TESTED AT	APPROVED BY	DATE
Glacial Till	SML Lincoln	LPD	11-5-65

CLASSIFICATION GC-GM LL 27 PI 6

MAX. PARTICLE SIZE INCLUDED IN TEST < 3/4"

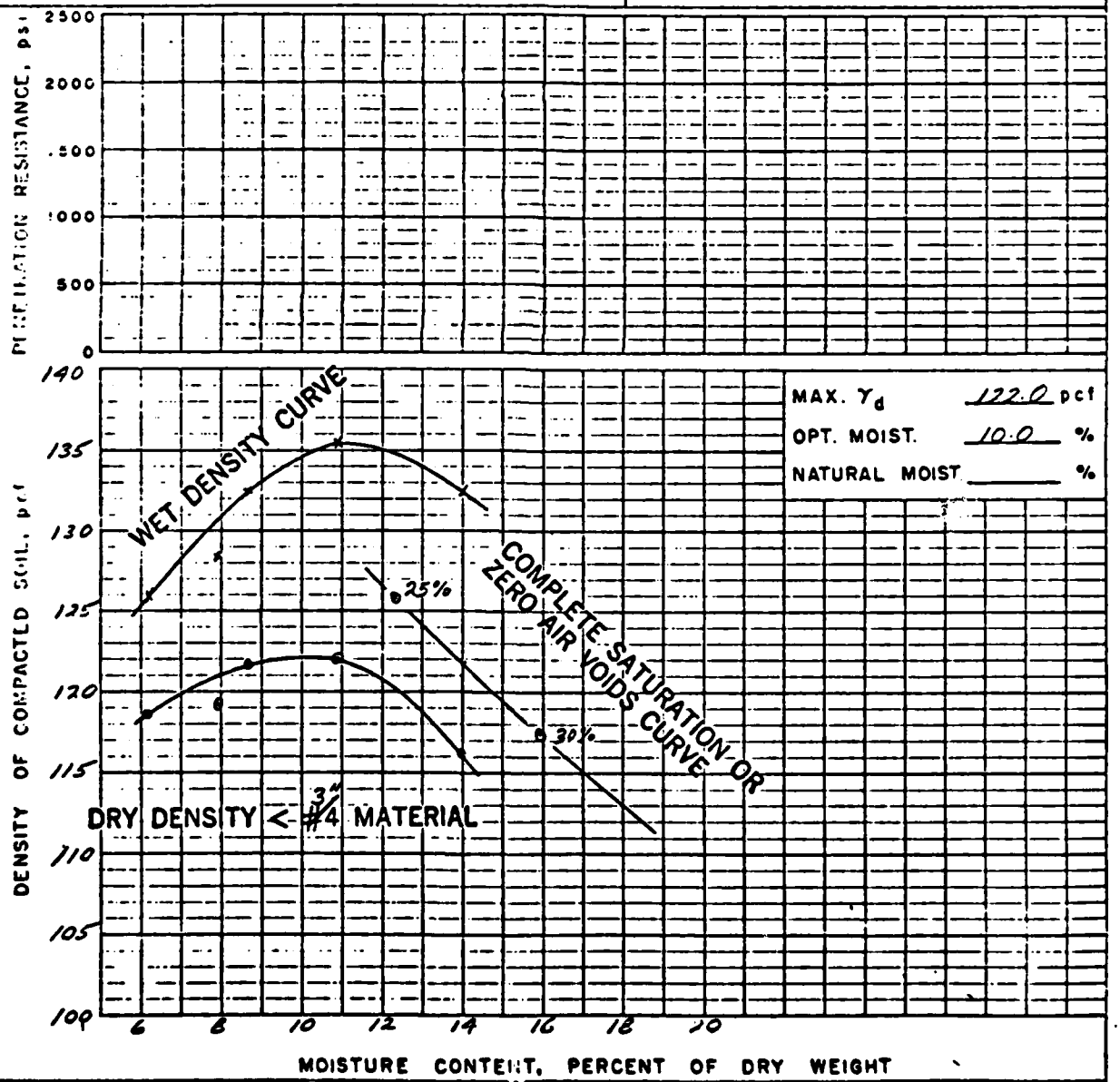
SPECIFIC GRAVITY (G_s) { MINUS NO. 4 2.69 / PLUS NO. 4 2.74

CURVE NO. 2X OF 3X

STD. (ASTM D-698) ☒; METHOD C

MOD. (ASTM D-1557) ☐; METHOD _____

OTHER TEST ☐ (SEE REMARKS)



REMARKS

Form SCS 332
Rev. 5-63

LABORATORY NO 66W1942

MATERIALS TESTING REPORT	U. S. DEPARTMENT of AGRICULTURE SOIL CONSERVATION SERVICE	COMPACTION AND PENETRATION RESISTANCE

PROJECT and STATE: Little Choconut Creek #2C New York

FIELD SAMPLE NO	LOCATION	DEPTH
207.1	Emergency Spillway	2'-10'

GEOLOGIC ORIGIN	TESTED AT	APPROVED BY	DATE
Glacial Till	SML Lincoln	LPD	11-5-65

CLASSIFICATION _____ LL _____ PI _____

MAX. PARTICLE SIZE INCLUDED IN TEST < 3/4" *

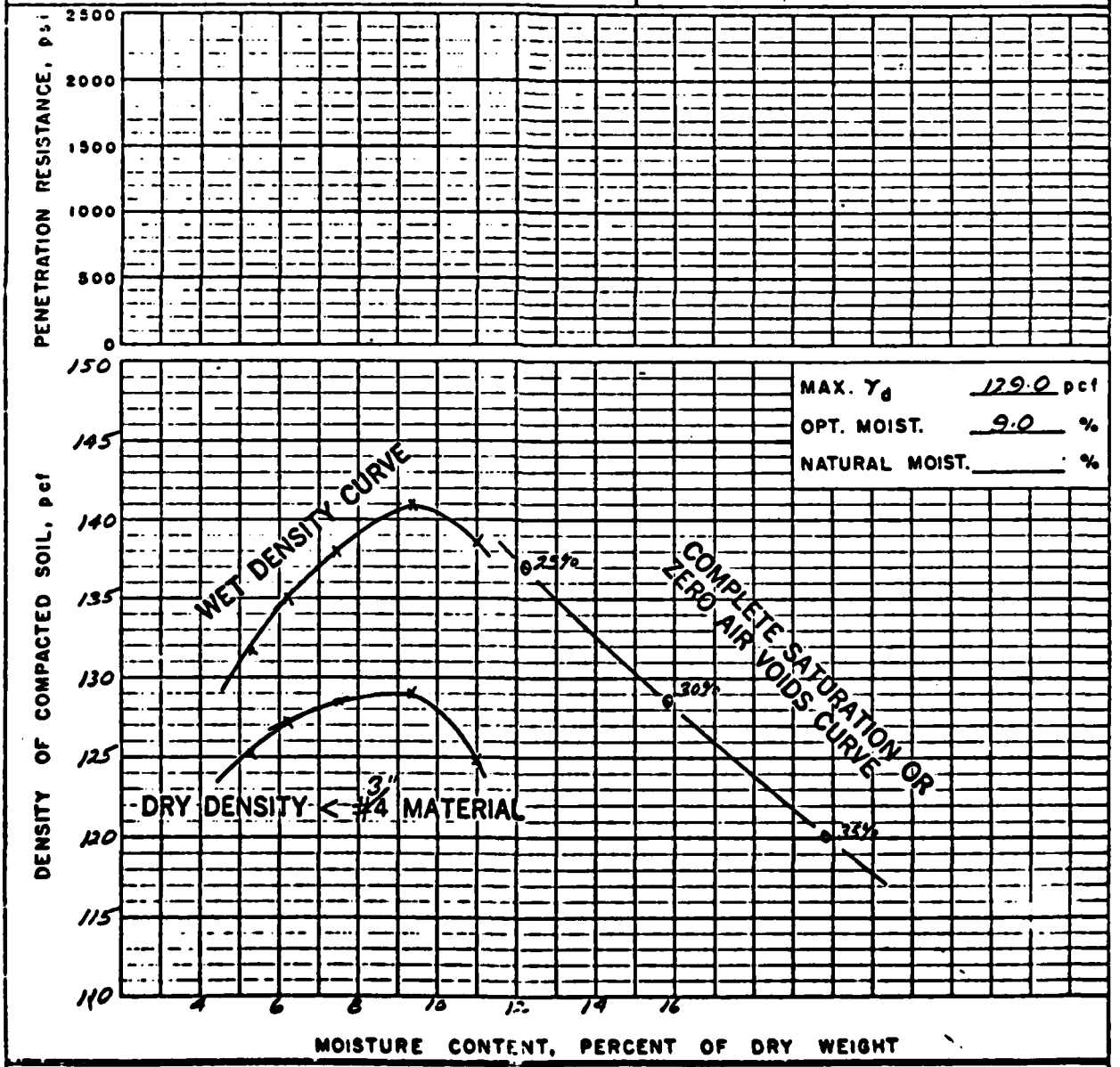
SPECIFIC GRAVITY (G_s) { MINUS NO. 4 2.71 / PLUS NO. 4 2.72

CURVE NO. 3X OF 3X

STD. (ASTM D-698) ☒; METHOD C

MOD. (ASTM D-1557) ☐; METHOD _____

OTHER TEST ☐ (SEE REMARKS)



REMARKS

APPENDIX E

REFERENCES

HYDRAULICS

Chow, Ven Te, 1959, Open Channel Hydraulics, McGraw Hill.

King, H.W. and E.F. Brater, 1963, Handbook of Hydraulics, 5th Edition, McGraw-Hill

U.S. Army Corps of Engineers:

HEC-1 Flood Hydrograph Package - Dam Safety Version, September 1978.

Engineering Manual 1110-2-1405; Flood-Hydrograph Analyses and Computations, August 1959.

U.S. Department of Agriculture, Soil Conservation Service:

National Engineering Handbook; Section 4 - Hydrology, August 1972.

U.S. Department of Commerce; Weather Bureau:

Hydrometeorological Report No. 33: Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas from 10 to 1,000 Square Miles and Durations of 6,12,24, and 48 Hours, April 1956.

U.S. Department of the Interior:

BUREC, 1977, Design of Small Dams, 2nd Ed. (rev. reprint).

USGS, 1980, Water Resources Data For New York, Western New York, USGS Water Data Report NY-80-3.

APPENDIX F

PREVIOUS INSPECTION REPORTS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DAM INSPECTION REPORT
(By Visual Inspection)

Dam Number	River Basin	Town	County	Hazard Class*	Date & Inspector
96A-3619	Susq.	Maine	Broome	B	5/28/76 KDH

Type of Construction

- ☐ Earth w/concrete spillway
- ☑ Earth w/drop inlet ~~pipe~~ concrete
- ☐ Earth w/stone or riprap spillway
- ☐ Concrete
- ☐ Stone
- ☐ Timber

Use

- ☐ Water Supply
- ☑ ~~Power~~ Flood Control
- ☐ Recreation
- ☐ Fish and Wildlife
- ☐ Farm Pond
- ☐ No Apparent Use-Abandoned

Estimated Impoundment Size

- ☐ 1-5 acres
- ☐ 5-10 acres
- ☑ Over ~~10~~ acres CANAL.

Estimated Height of Dam above Streambed

- ☐ Under 10 feet
- ☐ 10-25 feet
- ☑ Over 25 feet 59'

Condition of Spillway

- ☑ Service satisfactory
- ☐ In need of repair or maintenance

- ☑ Auxiliary satisfactory
- ☐ In need of repair or maintenance

Explain: _____

_____

Condition of Non-Overflow Section

- ☑ Satisfactory
- ☐ In need of repair or maintenance Explain: _____

_____

Condition of Mechanical Equipment

- ☑ ~~Satisfactory~~
- ☐ In need of repair or maintenance Explain: _____

_____

Evaluation (From Visual Inspection)

- ☑ No defects observed beyond normal maintenance
- ☐ Repairs required beyond normal maintenance

*Explain Hazard Class, if Necessary _____

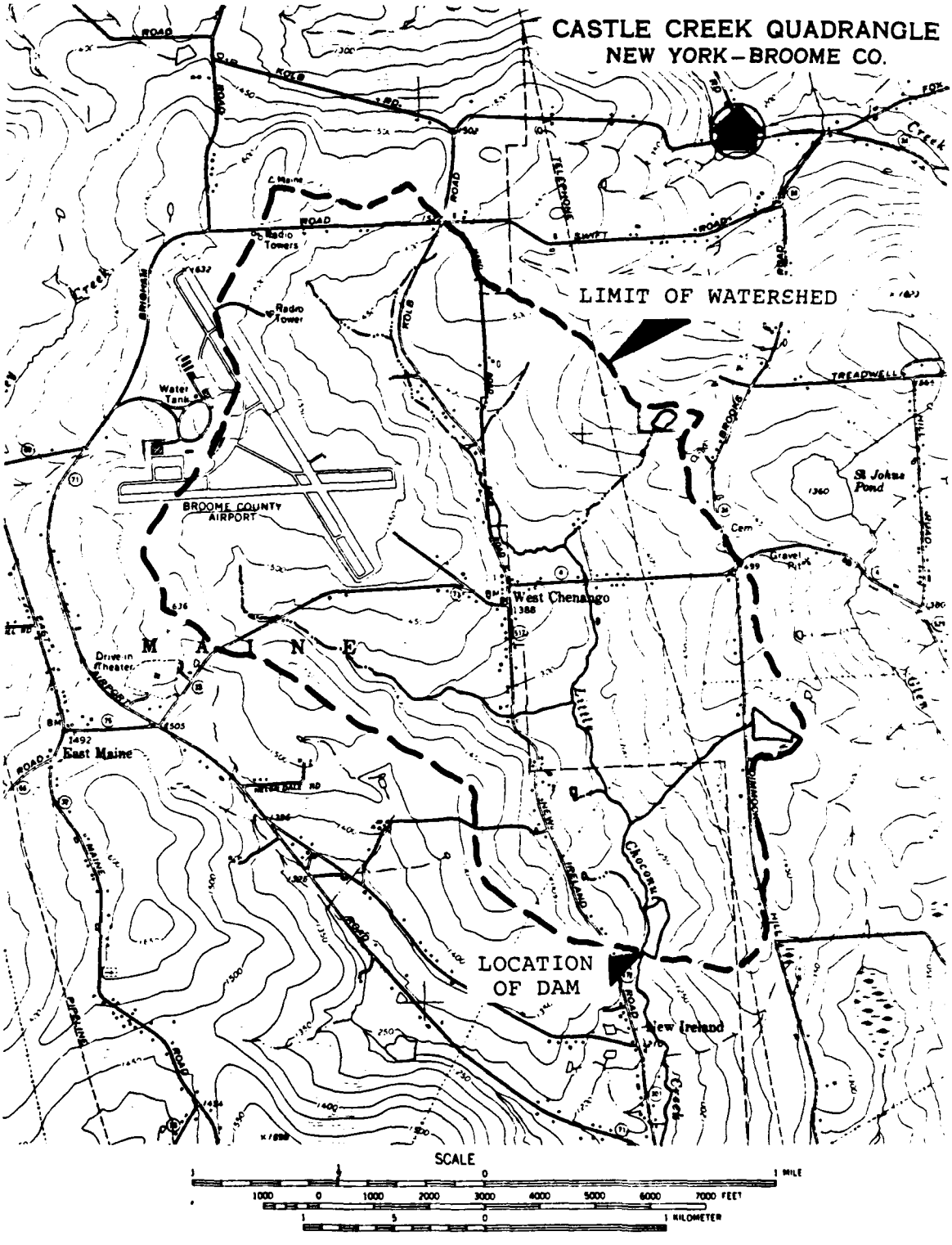
_____

APPENDIX G

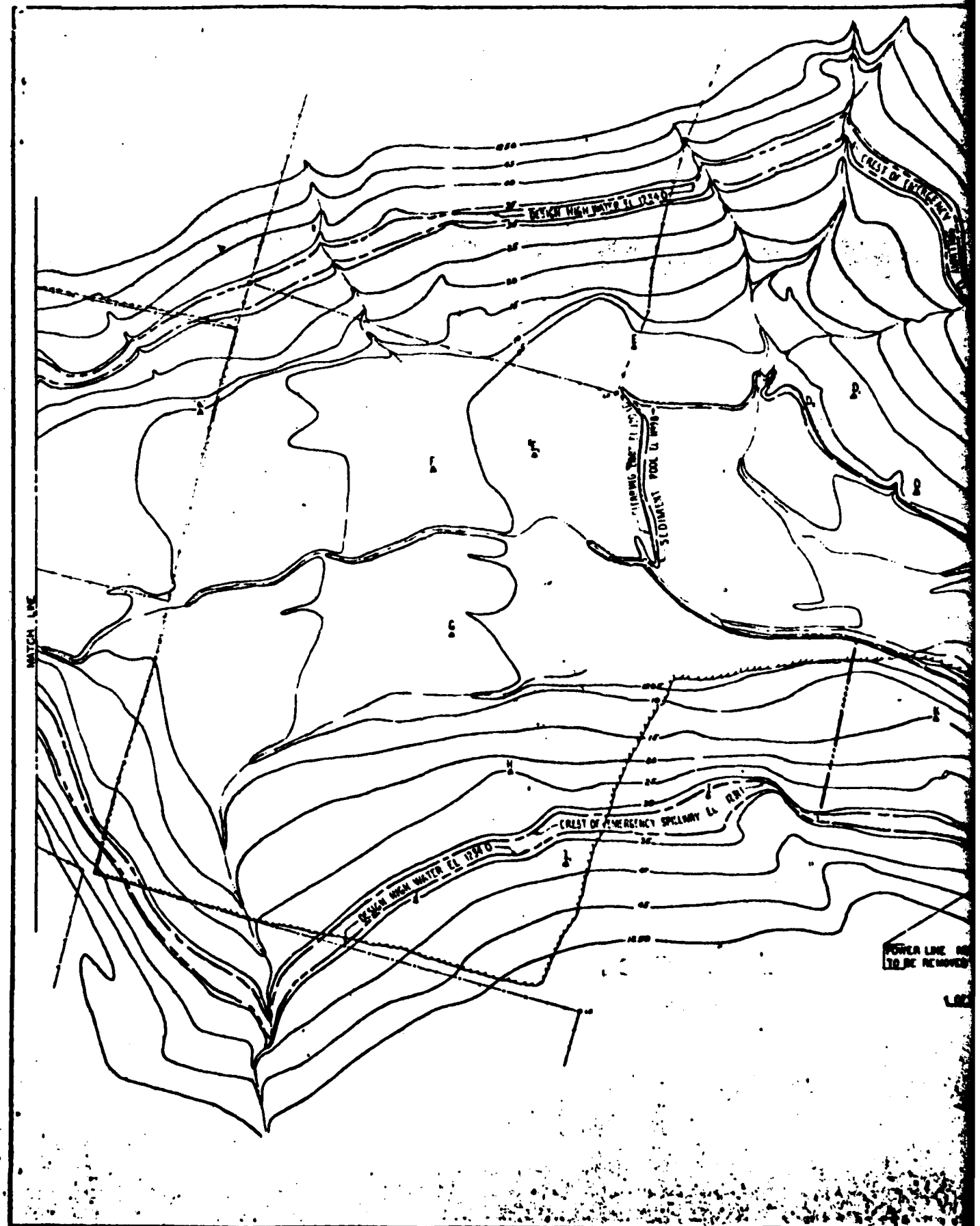
DRAWINGS

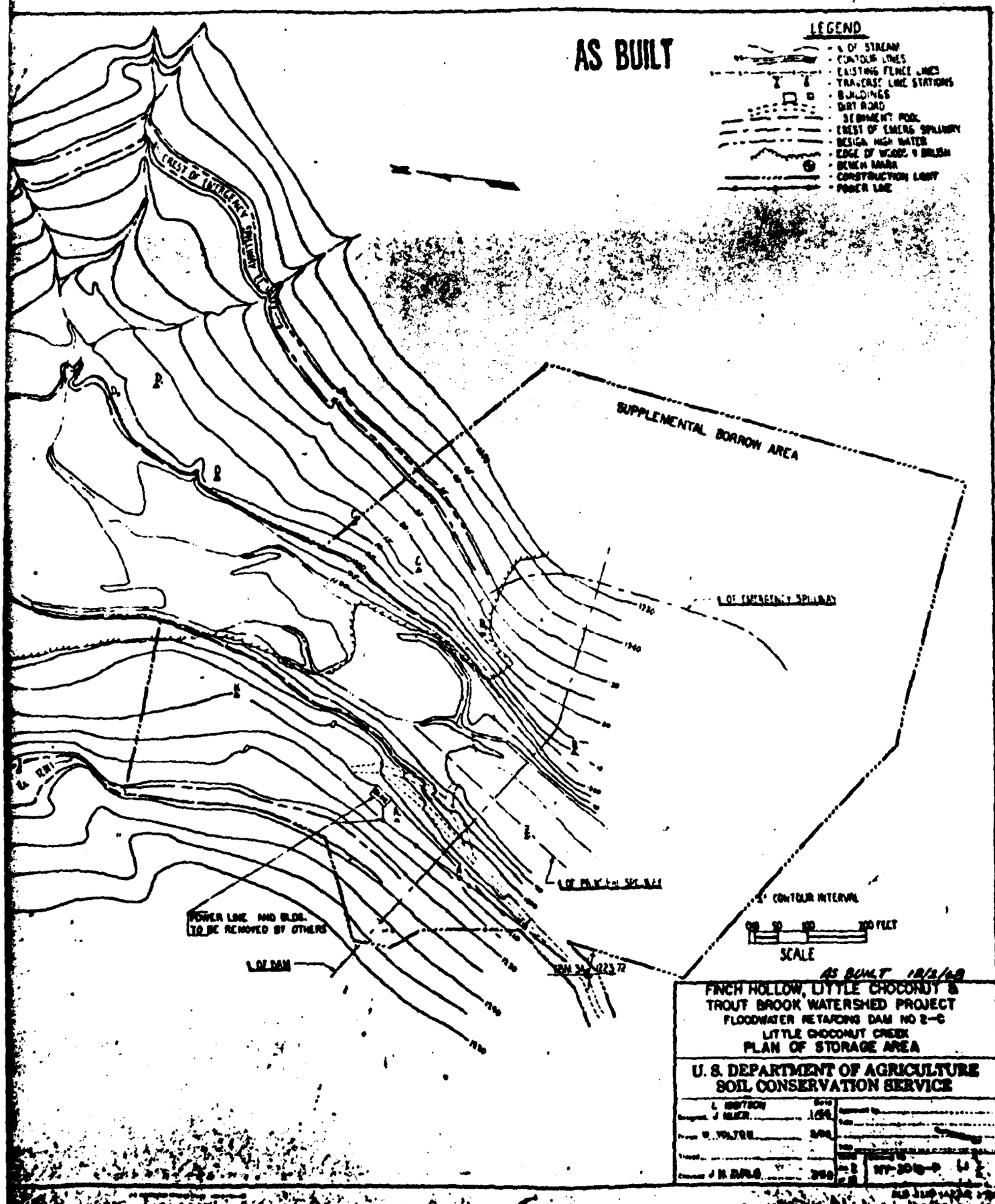
DAM SITE

VICINITY MAP
LITTLE CHOCONUT WATERSHED SITE 2C DAM
I.D. NO. NY 722



TOPOGRAPHIC MAP
LITTLE CHOCONUT WATERSHED
SITE 2C DAM
I.D. No. NY 722


MATCH LINE
DESIGN HIGH WATER EL 1240
CREST OF EMERGENCY SPILLWAY EL 1241
DESIGN HIGH WATER EL 1240
CREST OF EMERGENCY SPILLWAY EL 1241

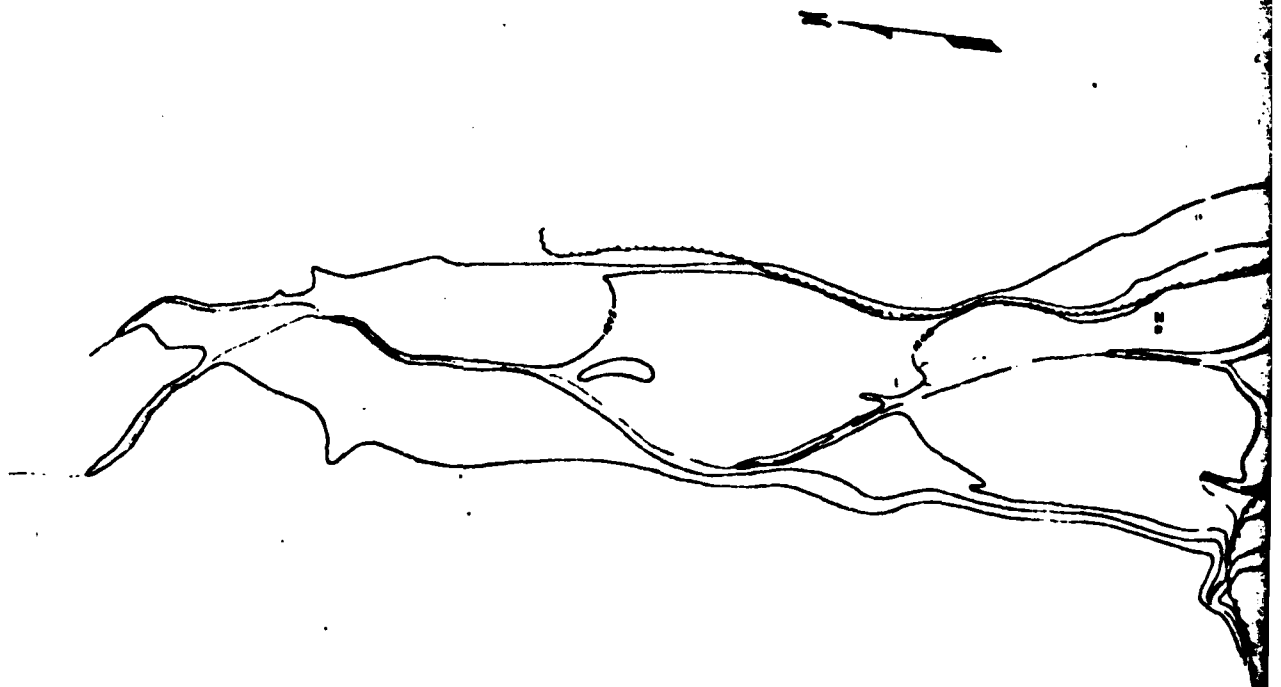

AS BUILT
LEGEND
- ℄ OF STREAM
- CONTOUR LINES
- EXISTING FENCE LINES
- TRAVERSE LINE STATIONS
- BUILDINGS
- DIRT ROAD
- SEDIMENT POOL
- CREST OF EMERG SPILLWAY
- DESIGN HIGH WATER
- EDGE OF WOODS & BRUSH
- BENCH MARK
- CONSTRUCTION LIMIT
- POWER LINE
CREST OF EMERGENCY SPILLWAY
SUPPLEMENTAL BORROW AREA
℄ OF EMERGENCY SPILLWAY
℄ OF PRINCIPAL SPILLWAY
POWER LINE AND BLDG. TO BE REMOVED BY OTHERS
℄ OF DAM
2' CONTOUR INTERVAL
0 50 100 200 FEET
SCALE
AS BUILT 12/2/69
FINCH HOLLOW, LITTLE COCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 2-C
LITTLE COCONUT CREEK
PLAN OF STORAGE AREA
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

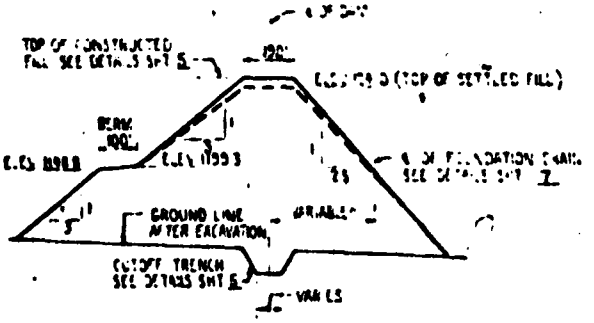
GENERAL NOTES

1. AREAS UNDER DAM, DIKE, EMERGENCY SPILLWAY AND SUPPLEMENTAL BORROW AREA TO BE CLEARED AND GRUBBED. LIMITS TO BE CLEARED AND GRUBBED SHALL BE AS STAKED IN THE FIELD BY THE ENGINEER. (SPEC. 8A)
2. AREA UPSTREAM FROM DAM AND BELOW ELEVATION 1201.0 (MSL) AND DESIGNATED WASTE AREAS SHALL BE CLEARED. LIMITS OF AREA TO BE CLEARED SHALL BE AS STAKED IN THE FIELD BY THE ENGINEER. (SPEC. 8)
3. BOTTOM SECTION OF EMERGENCY SPILLWAY FROM STATION 14+25 TO STATION 6+25 TO BE COVERED WITH 6" OF TOPSOIL. ALL ADDITIONAL TOPSOIL THAT IS SUITABLE FOR USE WILL BE INCORPORATED WITHIN THE SLOPES OF THE EARTHFILL AS DIRECTED BY THE ENGINEER

INSTRUCTIONS FOR FOUNDATION AND ABUTMENT

1. AFTER STRIPPING EXCAVATE THE FLOOD PLAIN SALTS FROM WITHIN THE LIMITS OF THE FOUNDATION OF THE DAM. (COMMON EXCAVATION) THE LIMITS AND DEPTHS OF THE EXCAVATION TO BE DETERMINED OF CONSTRUCTION BY THE ENGINEER IN
2. ABUTMENTS SHALL BE SLOPED TO 0:1 OR FLATTER (COMMON EXCAVATION)





TYPICAL SECTION OF DAM

NOT TO SCALE

EARTH FILL REQUIREMENTS					
MATERIAL	MAX ROCK SIZE	MAX LIFT 1/	REQ'D WATER CONTENT % 2/	COMPACT	
				CLASS	
SANDY GRAVELS FROM EMERGENCY SPILLWAY & SUPPLEMENTAL BORROW AREA REPRESENTED BY TP 3 FROM 10' TO 15' TP 205 FROM 10' TO 15' TP 2 F FROM 1 TO 10	6"	9"	2 PERCENTAGE PTS BELOW TO 2 PERCENTAGE PTS ABOVE OPTIMUM	A	95% ASTM

1/ MAXIMUM LIFT THICKNESS PRIOR TO COMPACTION.
2/ WATER CONTENT AT TIME OF COMPACTION
3/ FOR TYPICAL COMPACTION CURVES SEE SHEET 12

NOTE THE FOUNDATION SURFACE THROUGH THE SPILLWAY AREA OF THE DAM SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES AND COMPACTED PRIOR TO PLACEMENT OF FILL MATERIAL

FOR FOUNDATION AND ABUTMENT TREATMENT

STRIPPING (EXCAVATE THE FLOOD PLAIN
FROM WITHIN THE LIMITS OF THE FOUNDATION
DE DRAIL (COMMON EXCAVATION) THE LIMITS
EPTING OF THE EXCAVATION TO BE DETERMINED AT THE TIME
ONSTRUCTION BY THE ENGINEER IN THE FIELD
MENTS SHALL BE SLOPED TO 2:1 OR FLATTER
ED EXCAVATION)

AS BUILT

NOTE - FOR LEGEND SEE SHEET 2.

ENTS			
E LIFT	REQ'D WATER CONTENT 2/	COMPACTION 3/	
		CLASS	DEFINITION
4"	2 PERCENTAGE PTS BELOW TO 2 PERCENTAGE PTS ABOVE OPTIMUM	A	95% MAX DENSITY BY ASTM D698, METHOD C

5' CONTOUR INTERVAL

0 50 100 200 FEET
SCALE

AS BUILT 12/8/60

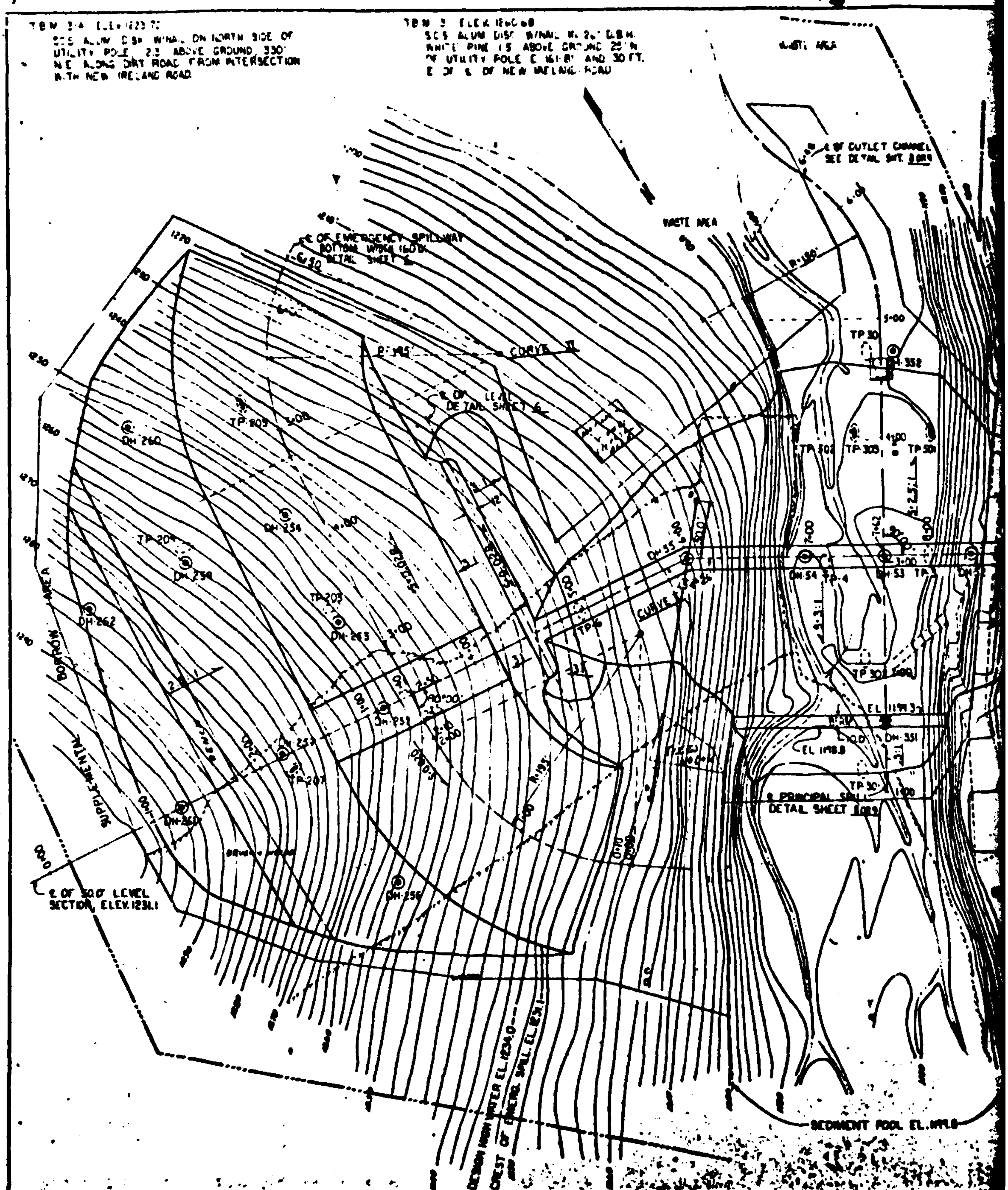
SHEET 2
THE BASE FACE OF
A DEPTH OF 6 INCHES
MENT OF FILL MATERIAL

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 2-C
LITTLE CHOCONUT CREEK
PLAN OF STORAGE AREA

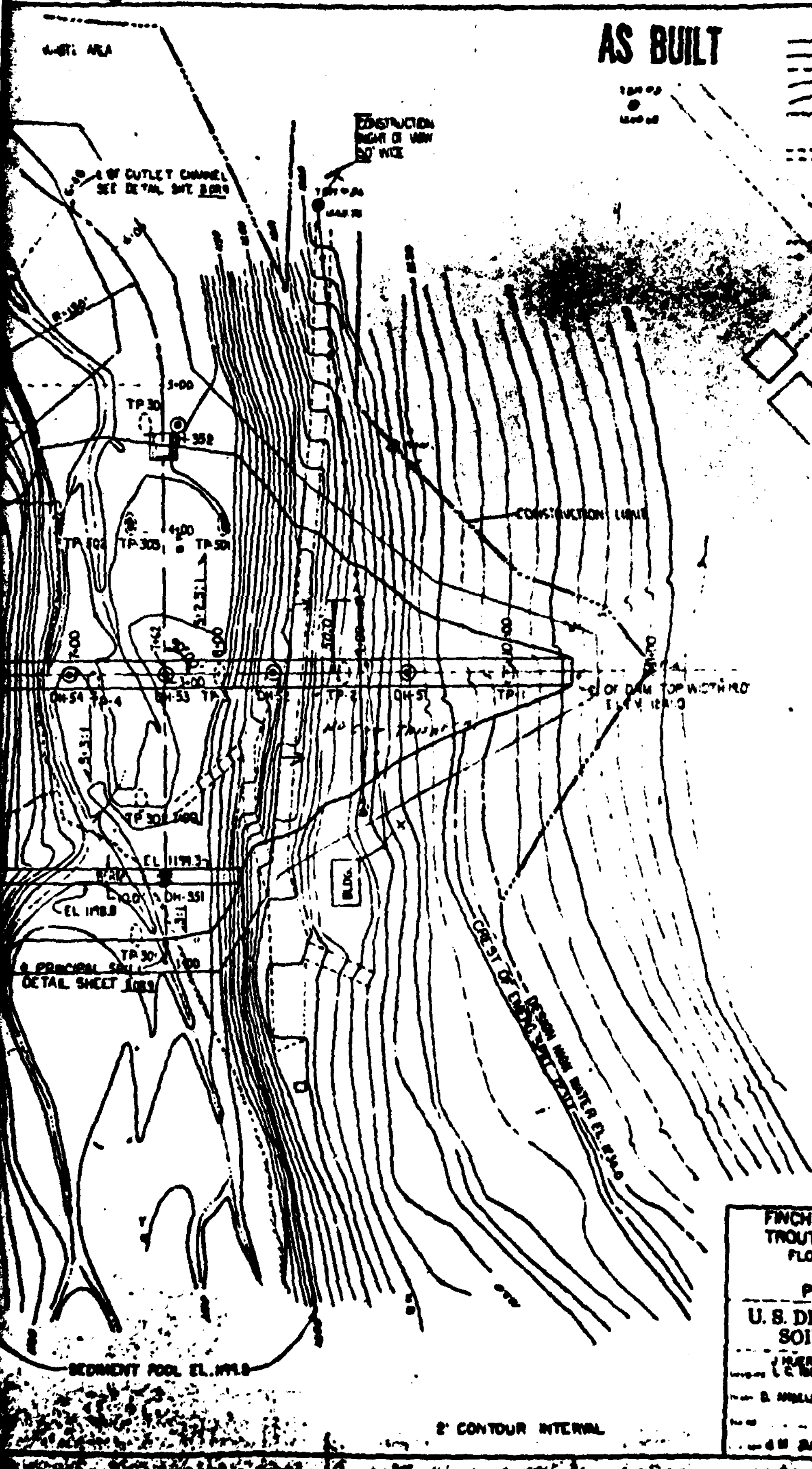
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	L IBBITSON	Date	Approved by
Drawn	W YOLTON		Title
Traced			Date
Checked	JM ZURLO		Sheet No. 3 of 10 sheets
			NY-2018-P

12


T.B.M. 3-A ELEV. 1223.7
SCS ALUM. DISK W/NAIL ON NORTH SIDE OF UTILITY POLE 2.3' ABOVE GROUND 330' N.E. ALONG DIRT ROAD FROM INTERSECTION WITH NEW IRELAND ROAD.
T.B.M. 3 ELEV.
SCS ALUM. DISC W/NAIL IN 24" D.B.H. WHITE PINE 1.5' ABOVE GROUND 25' N OF UTILITY POLE AND 30 FT. E OF ℄ OF NEW IRELAND ROAD
WASTE AREA
℄ OF OUTLET CHANNEL SEE DETAIL SHT.
WASTE AREA
℄ OF EMERGENCY SPILLWAY BOTTOM WIDTH 160.0' DETAIL SHEET
CURVE II
℄ OF LEVEL DETAIL SHEET 6
TP-203
DH-260
TP-302
TP-305
TP-301
DH-258
TP-204
DH-259
DH-55
DH-54
DH-53
TP-203
DH-263
DH-262
CURVE
BORROW AREA
TP-6
EL. 1199.3
DH-252
DH-351
EL. 1198.8
TP-207
℄ PRINCIPAL SPILLWAY DETAIL SHEET
SUPPLEMENTAL
DH-261
DH-256
℄ OF 30.0' LEVEL SECTION, ELEV. 1231.1
DESIGN HIGH WATER EL. 1234.0
CREST OF EMERG. SPILL. EL. 1231.1
SEDIMENT POOL EL. 1199.8

AS BUILT



LEGEND

- DESIGN HIGH WATER
- CREST OF EMERG. SPILL.
- SEDIMENT POOL
- ¢ OF STREAM
- CONTOUR LINES
- WOODS LINE
- BENCH MARK
- TRAVERSE STATIONS
- DIRT ROAD
- BUILDINGS
- IRON ROD
- DRILL HOLE
- TEST PIT
- TEST PIT
- CONSTRUCTION LIMIT
- POWER LINE

LAYOUT DATA CURVE I

Δ= 58°46' T=109.80
R=195' E=28.79
D=29°23' M=23.08
L=200'

¢ STATION	DEFLECTION	DIST FROM PC
2+10	0	0
1+85	3°40'	24.94
1+60	7°21'	49.89
1+35	11°01'	74.53
1+10	14°41'	98.86
0+85	18°22'	122.89
0+60	22°02'	146.31
0+35	25°42'	169.13
0+10	29°23'	191.35

LAYOUT DATA CURVE II

Δ 51°24' T 93.85'
R 195' E 21.41
D 29°23' M 19.29
L 174.95'

¢ STATION	DEFLECTION	DIST. FROM PC
4+75	0	0
5+00	3°40'	24.94
5+25	7°21'	49.89
5+50	11°01'	74.83
5+75	14°41'	98.86
6+00	18°22'	122.89
6+25	22°02'	146.31
6+50	25°42'	169.13

0 10 25 50 100 FEET
SCALE

AS BUILT 10/2/68

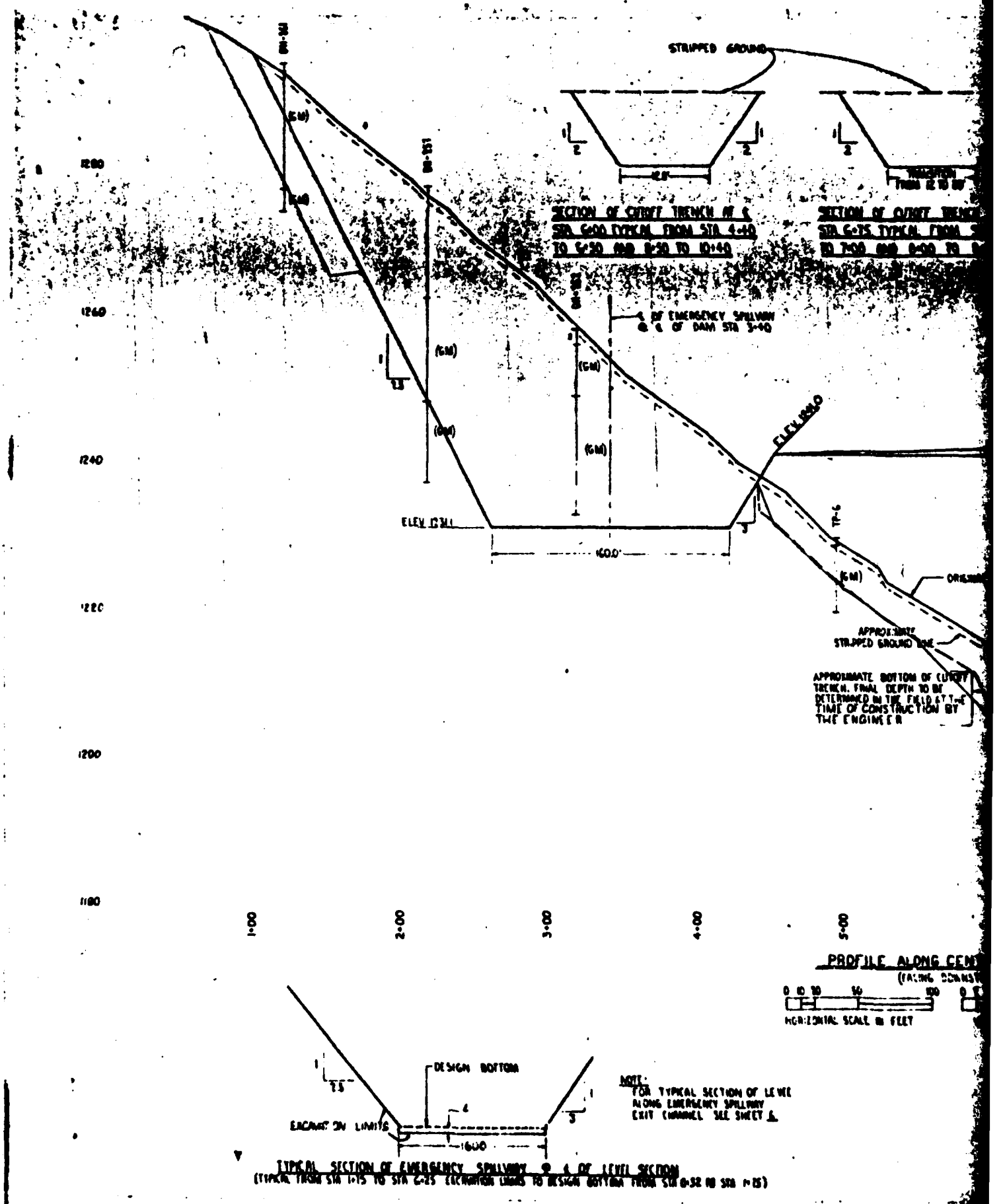
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 2-C
LITTLE CHOCONUT CREEK
PLAN OF STRUCTURAL WORKS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

J. HUER
L. C. ROBITSON 3/66
B. ANELLO 3/66
G. M. SAFLO 3/66

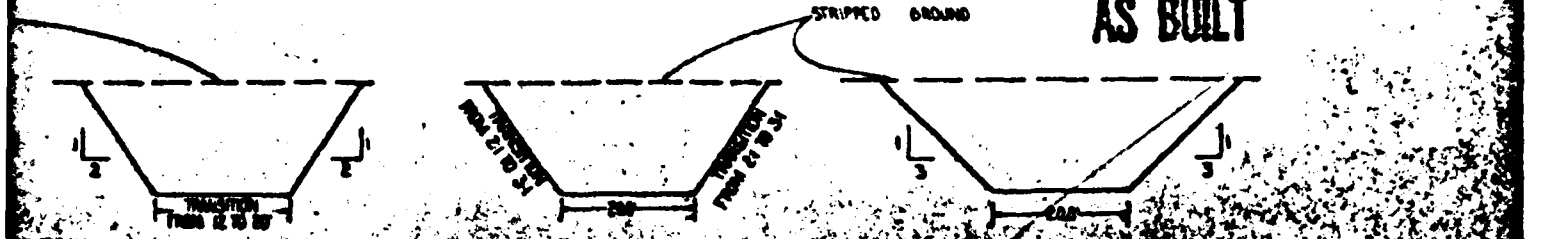
NY-200-P

1 2



TYPICAL SECTION OF EMERGENCY SPILLWAY @ ℄ OF LEVEE SECTION
(TYPICAL FROM STA 1+15 TO STA 2+25 EXCAVATION LIMITS TO DESIGN BOTTOM FROM STA 0+32 TO STA 1+15)

AS BUILT

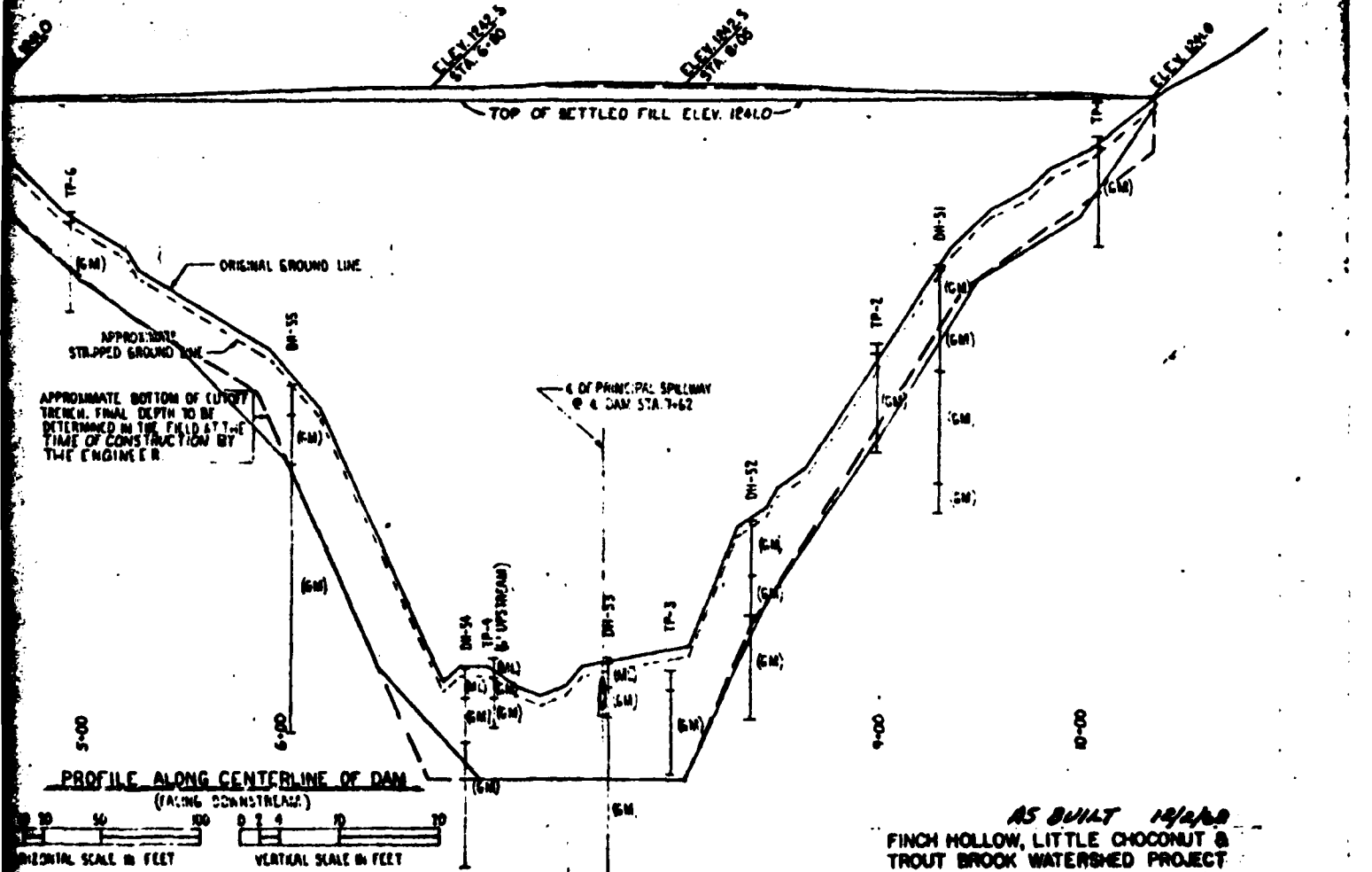


SECTION OF CUTOFF TRENCH AT ℄ STA 6+75 TYPICAL FROM STA 6+50 TO 7+00 AND 8+00 TO 8+50

SECTION OF CUTOFF TRENCH AT ℄ STA 8+00 TYPICAL FROM STA 7+00 TO 7+50 AND 7+75 TO 8+00

SECTION OF CUTOFF TRENCH AT ℄ STA 7+62 TYPICAL FROM STA 7+50 TO 7+75

CONSTRUCTION ELEVATIONS



PROFILE ALONG CENTERLINE OF DAM
(FACING DOWNSTREAM)

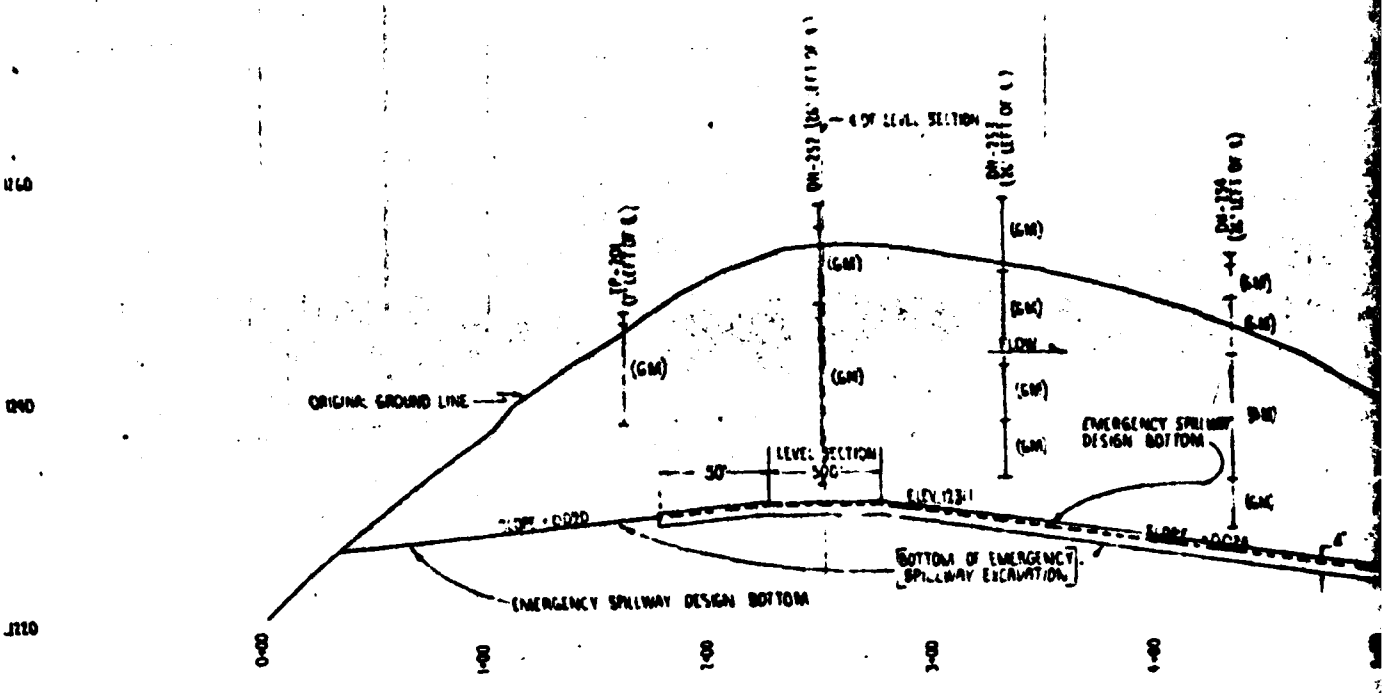
ORIZONTAL SCALE IN FEET 0 20 50 100

VERTICAL SCALE IN FEET 0 2 4 10 20

AS BUILT 12/2/58

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 2-C
LITTLE CHOCONUT CREEK
PROFILES

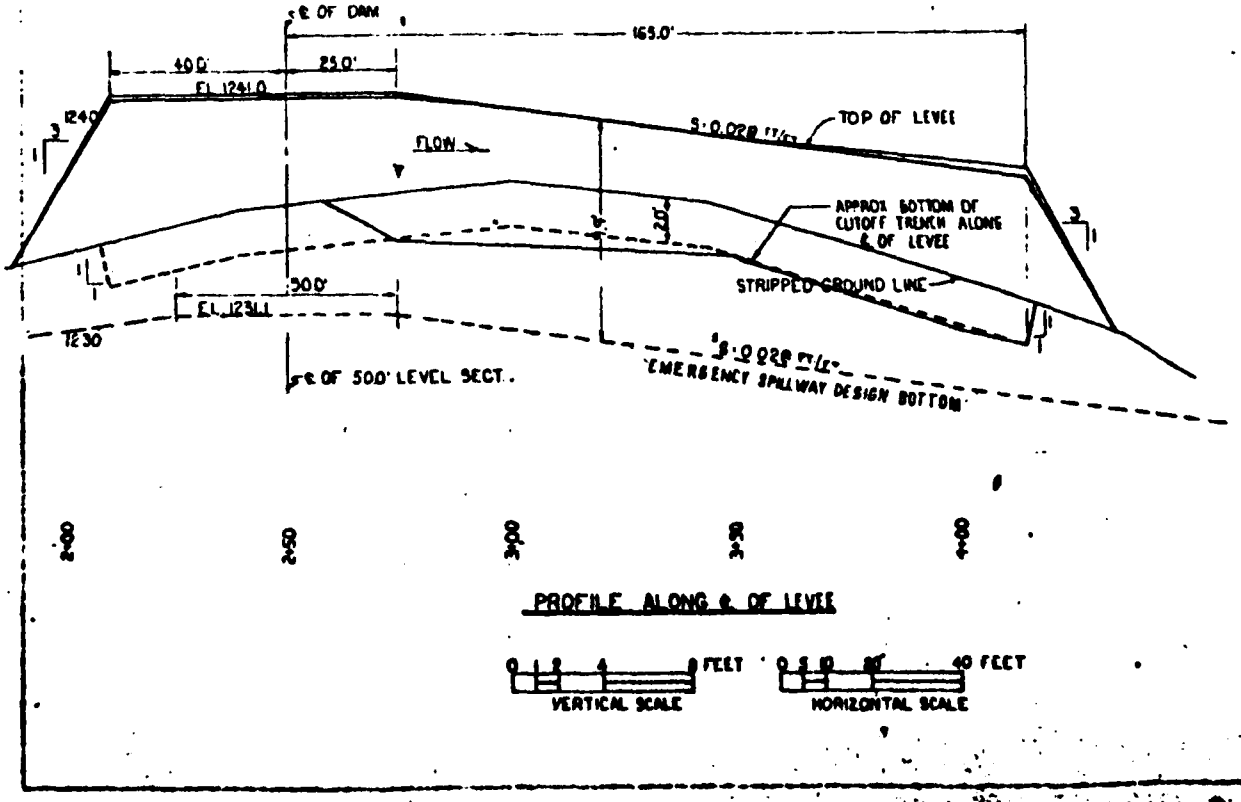
DESIGN 1/58
R. TELTON 2/58
AM. SOILS TECH. NY-2058-P



PROFILE ALONG ℄ OF EMERGENCY SPILLWAY

HORIZONTAL SCALE 0 50 100 FEET

VERTICAL SCALE 0 2 4 10 20 FEET



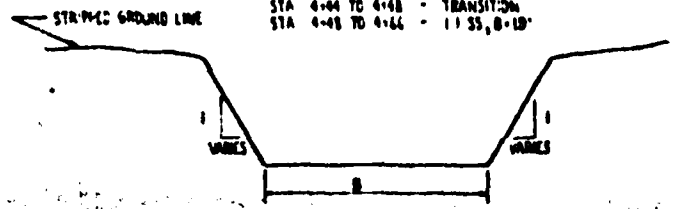
PROFILE ALONG ℄ OF LEVEE

VERTICAL SCALE 0 2 4 FEET

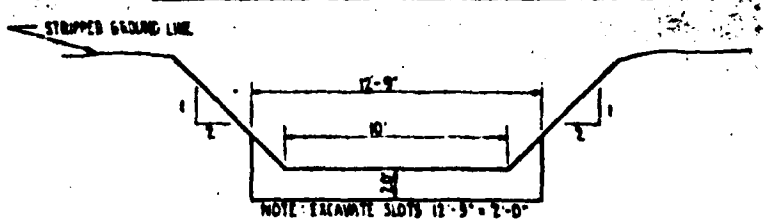
HORIZONTAL SCALE 0 20 40 FEET

AS BUILT

STA 1+12 - 2:1 SS, 8'-10" BW
STA 1+12 TO 1+18 - TRANSITION
STA 1+18 TO 3+96 - 2:1 SS, 8'-10" BW
STA 3+96 TO 4+44 - 3:1 SS, 8'-10" BW
STA 4+44 TO 4+48 - TRANSITION
STA 4+48 TO 4+66 - 1:1 SS, 8'-10" BW

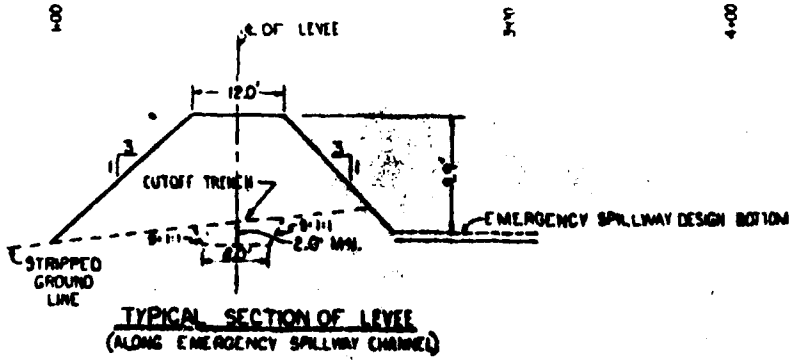


TYPICAL SECTION OF PRINCIPAL SPILLWAY EXCAVATION



PRINCIPAL SPILLWAY EXCAVATION AT ANTI-SEEP COLLARS

PROFILE ALONG ℄ OF PRINCIPAL SPILLWAY



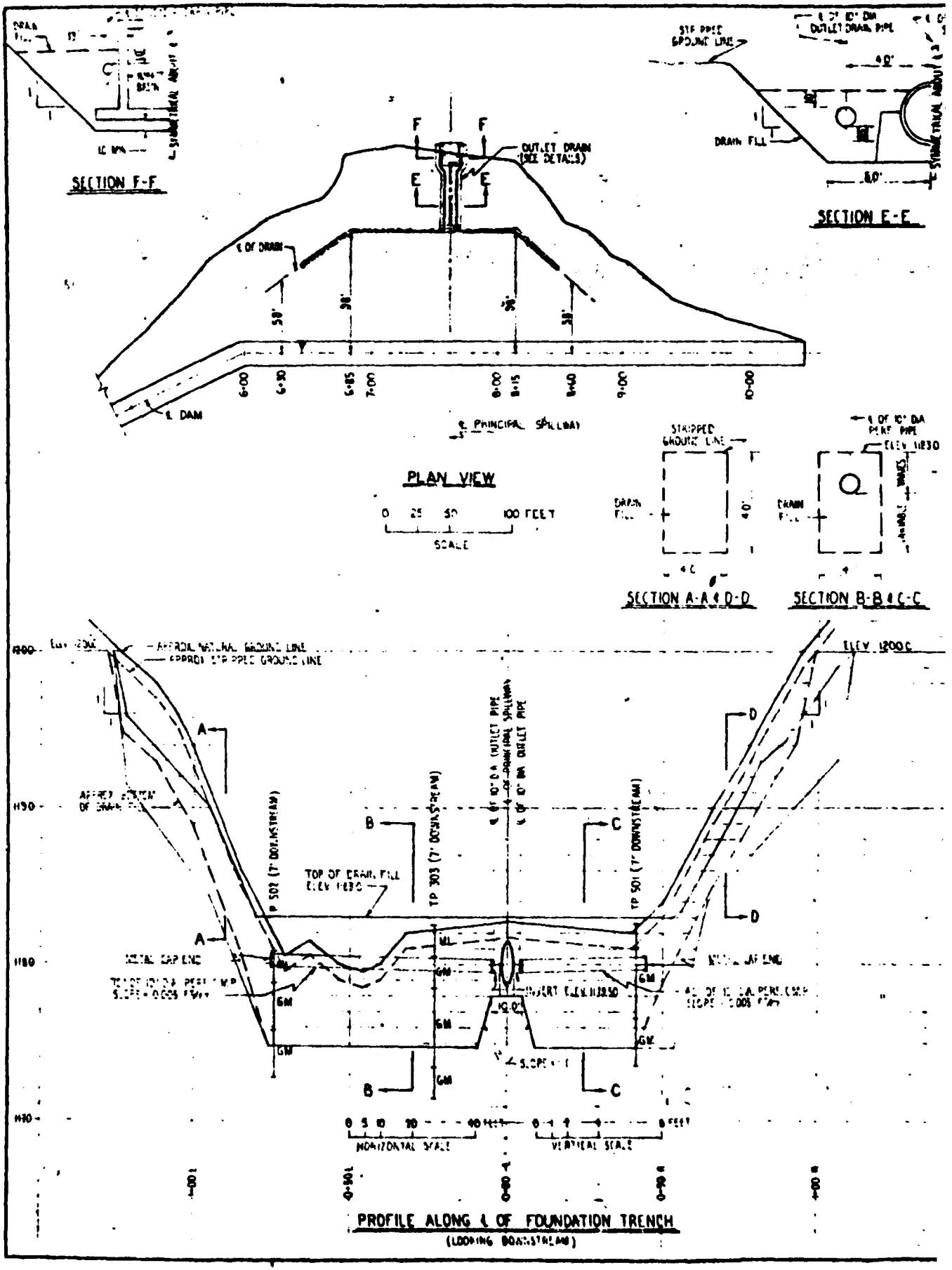
TYPICAL SECTION OF LEVEE
(ALONG EMERGENCY SPILLWAY CHANNEL)

AS BUILT 12/2/68

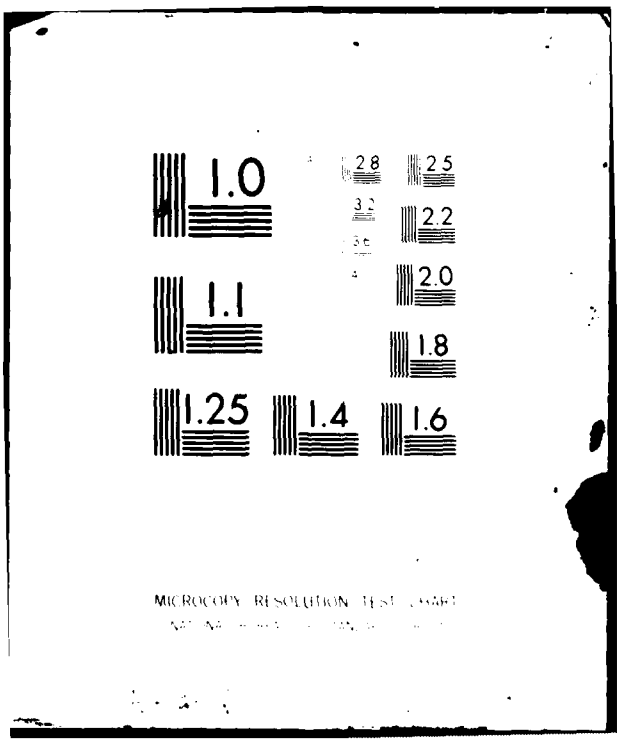
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 2-C
LITTLE CHOCONUT CREEK
PROFILES

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

L. IBBITSON J. HUER	1/66	
W. YOLTON	3/66	
J.M. ZURLO	7/66	6 10 NY-2018-P


SECTION F-F
SECTION E-E
OUTLET DRAIN (SEE DETAILS)
E OF DRAIN
E DAM
E PRINCIPAL SPILLWAY
PLAN VIEW
0 25 50 100 FEET
SCALE
SECTION A-A & D-D
SECTION B-B & C-C
TOP OF DRAIN FILL ELEV 1180
TP 502 (7' DOWNSTREAM)
TP 303 (7' DOWNSTREAM)
TP 501 (7' DOWNSTREAM)
INVERT ELEV 1138.50
HORIZONTAL SCALE
VERTICAL SCALE
PROFILE ALONG E OF FOUNDATION TRENCH
(LOOKING DOWNSTREAM)

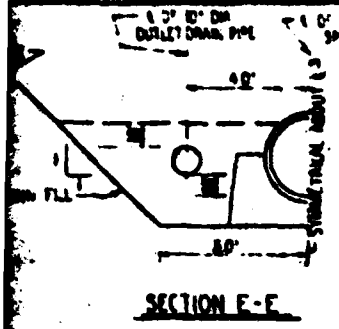
AD-A109 797 METCALF AND EDDY OF NEW YORK INC NY F/G 13/13
NATIONAL DAM SAFETY PROGRAM. LITTLE CHOCONUT WATERSHED SITE 2C --ETC(U)
SEP 81 G P FULTON DACW51-81-C-0044
UNCLASSIFIED NL


1.0
1.1
1.25
1.4
1.6
2.0
2.2
1.8
MICROCOPY RESOLUTION TEST CHART

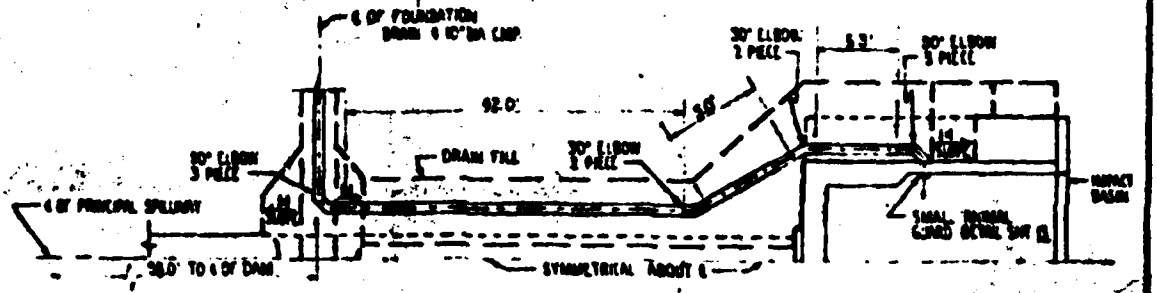
AS BUILT

DRAINAGE SYSTEM NOTES

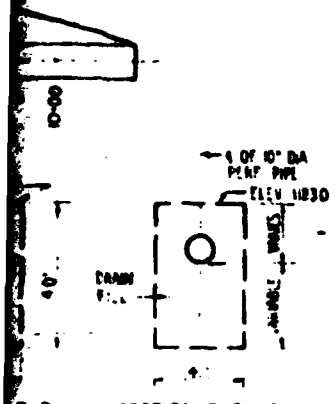
1. ALL DRAIN PIPE SHALL CONFORM TO SPECIFICATION NO. PVC SHALL BE 10" DIA SHAPE 1 CLASS 1 PVC U, ASTM OR CLASS 2 HELICAL TYPE A FULLY BITUMINOUS COATED, PERFORATED PIPE.
2. USE A MINIMUM OF 6" OF DRAIN FILL AROUND PIPES
3. THE PROFILES OF THE BOTTOM OF ALL EXCAVATIONS AS SHOWN ARE ONLY APPROX. THE REQUIRED FINISHED GRADES WILL BE ESTABLISHED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE ENGINEER



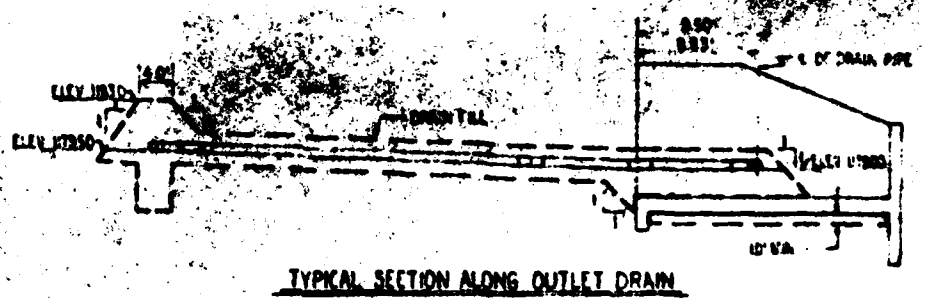
SECTION E-E



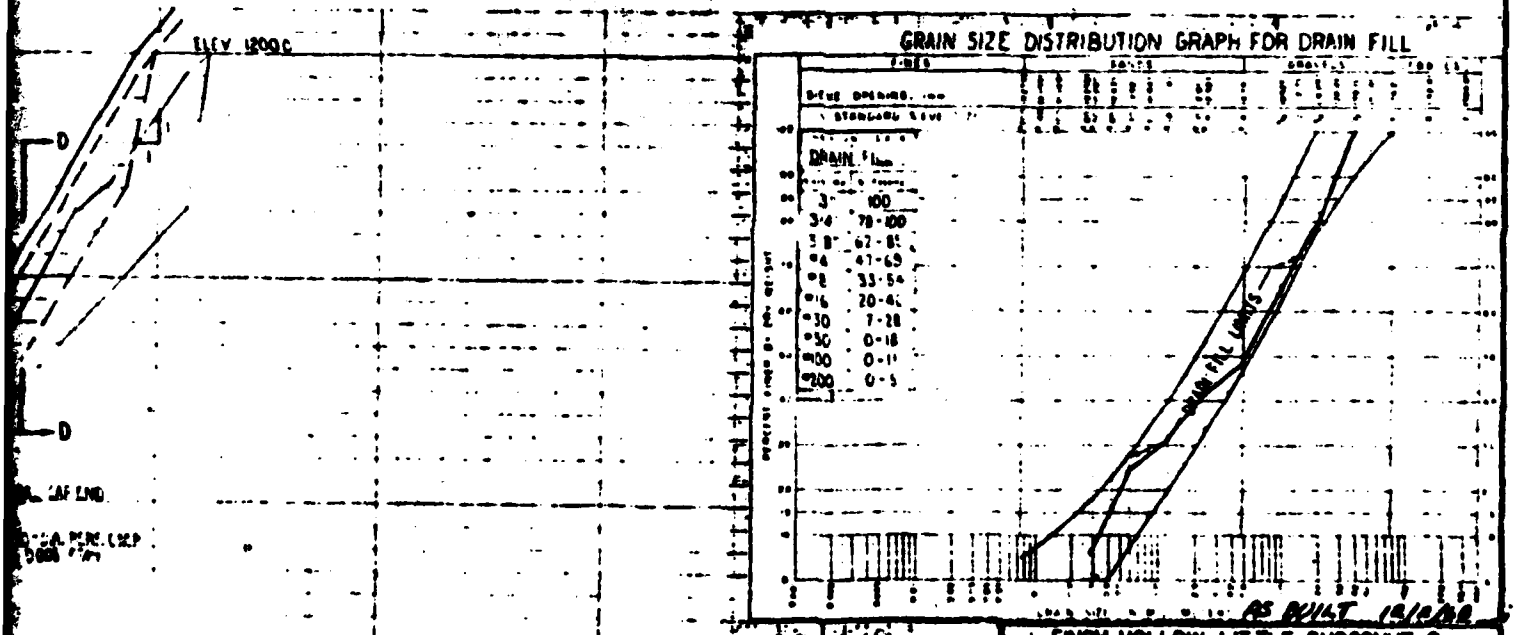
PLAN OF OUTLET DRAIN
(NOT TO SCALE)



SECTION B-B & C-C



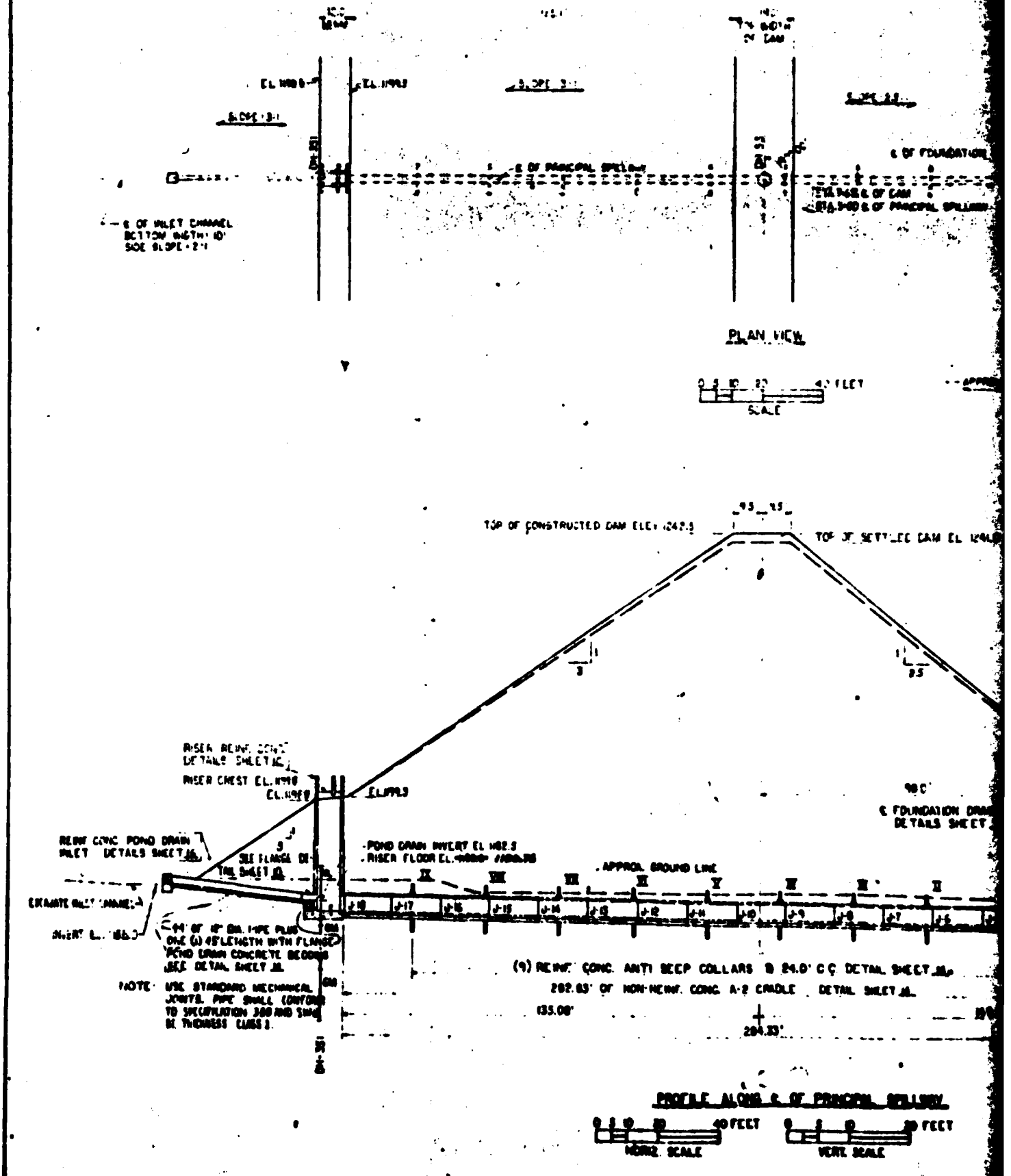
TYPICAL SECTION ALONG OUTLET DRAIN



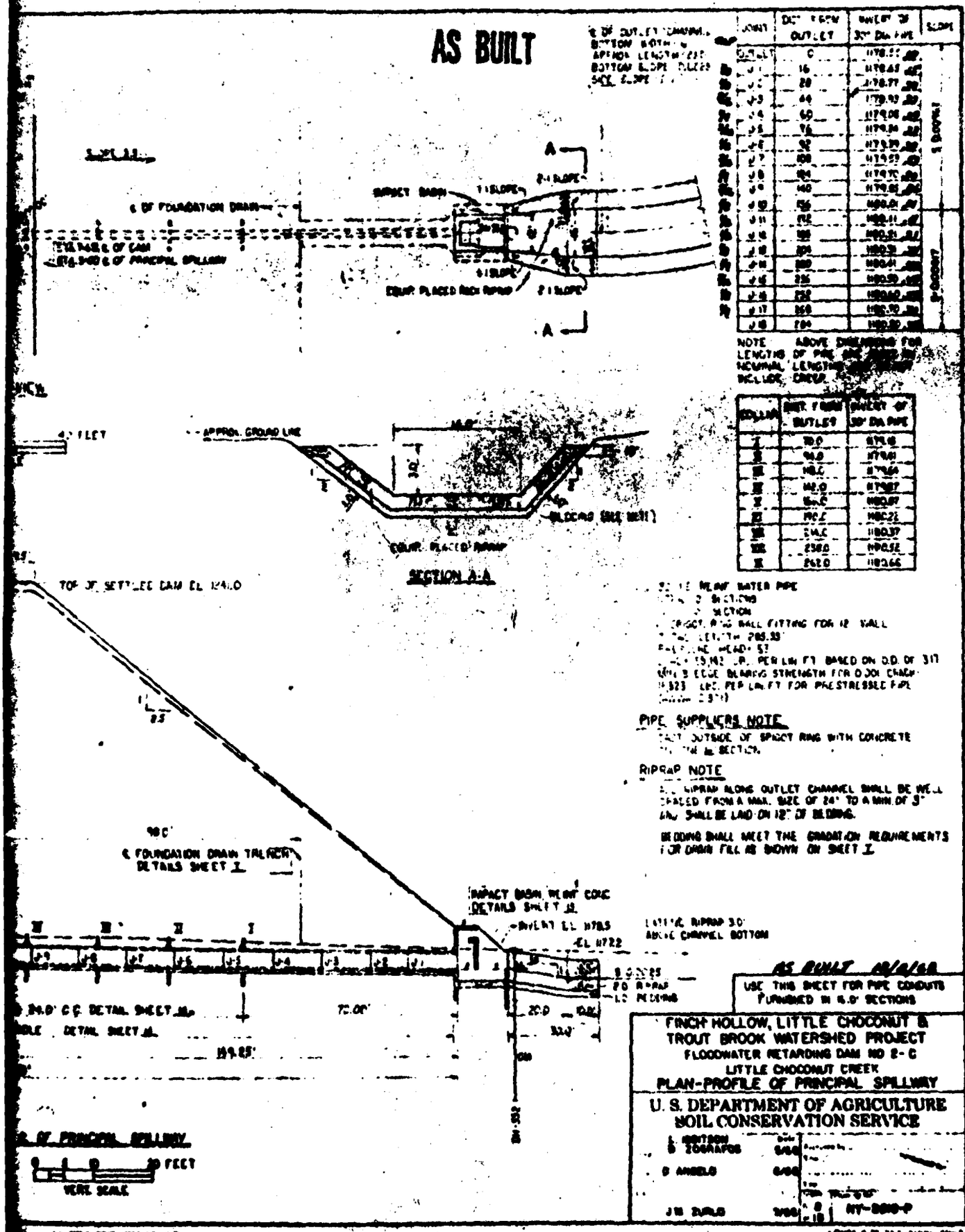
AS BUILT 12/10/68

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 2-C
LITTLE CHOCONUT CREEK
DRAINAGE SYSTEM DETAILS
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

L GIBSON 6/68
W YOLTON 6/68
J M ZURLO 7/68
NY-2018-P


PLAN VIEW
SCALE
TOP OF CONSTRUCTED DAM
TOP OF SETTLED DAM
RISER REINF. CONC.
RISER CREST EL.
REINF CONC POND DRAIN
INLET DETAILS SHEET
POND DRAIN INVERT EL
RISER FLOOR EL.
APPROX. GROUND LINE
(9) REINF. CONC. ANTI SEEP COLLARS @ 24.0' C C DETAIL SHEET
282.83' OF NON-REINF. CONC. A-2 CRADLE DETAIL SHEET
135.00'
284.33'
NOTE: USE STANDARD MECHANICAL
PROFILE ALONG ℄ OF PRINCIPAL SPILLWAY
HORIZ. SCALE
VERT. SCALE

AS BUILT



JOINT	DIST. FROM OUTLET	INVERT OF 30" DIA PIPE	SLOPE
OUTLET	0	1178.5	
J-1	16	1178.63	
J-2	28	1178.77	
J-3	44	1178.93	
J-4	60	1179.08	
J-5	76	1179.24	
J-6	92	1179.39	
J-7	108	1179.55	
J-8	124	1179.70	
J-9	140	1179.86	
J-10	156	1180.01	
J-11	172	1180.17	
J-12	188	1180.31	
J-13	204	1180.32	
J-14	220	1180.41	
J-15	236	1180.50	
J-16	252	1180.60	
J-17	268	1180.70	
J-18	284	1180.80	

NOTE ABOVE DIMENSIONS FOR LENGTHS OF PIPE ARE [illegible] NOMINAL LENGTHS [illegible] INCLUDE CREW.

COLLAR	DIST. FROM OUTLET	INVERT OF 30" DIA PIPE
I	78.0	1179.18
II	96.0	1179.61
III	148.0	1179.69
IV	162.0	1179.87
V	194.0	1180.09
VI	210.2	1180.23
VII	246.0	1180.37
VIII	2560	1180.52
IX	2620	1180.66

[illegible] REINF WATER PIPE
[illegible] SECTIONS
[illegible] SECTION
[illegible] SPIGOT RING BELL FITTING FOR 12' WALL
[illegible] LENGTH 285.33'
[illegible] HEAD: 57
[illegible] 15,162 LB. PER LIN FT BASED ON O.D. OF 317
[illegible] EDGE BEARING STRENGTH FOR 0.001 CRACK
1823 LBS. PER LIN FT FOR PRESTRESSED PIPE
[illegible] 317)

PIPE SUPPLIERS NOTE

[illegible] OUTSIDE OF SPIGOT RING WITH CONCRETE
[illegible] SECTION.

RIPRAP NOTE

[illegible] RIPRAP ALONG OUTLET CHANNEL SHALL BE WELL GRADED FROM A MAX. SIZE OF 24" TO A MIN OF 3" AND SHALL BE LAID ON 12" OF BEDDING.

BEDDING SHALL MEET THE GRADATION REQUIREMENTS FOR DRAIN FILL AS SHOWN ON SHEET 2.

AS BUILT REVISION

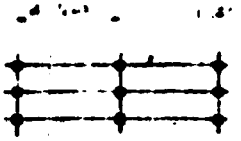
USE THIS SHEET FOR PIPE CONDUITS FURNISHED IN 6.0' SECTIONS

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 8-C
LITTLE CHOCONUT CREEK
PLAN-PROFILE OF PRINCIPAL SPILLWAY

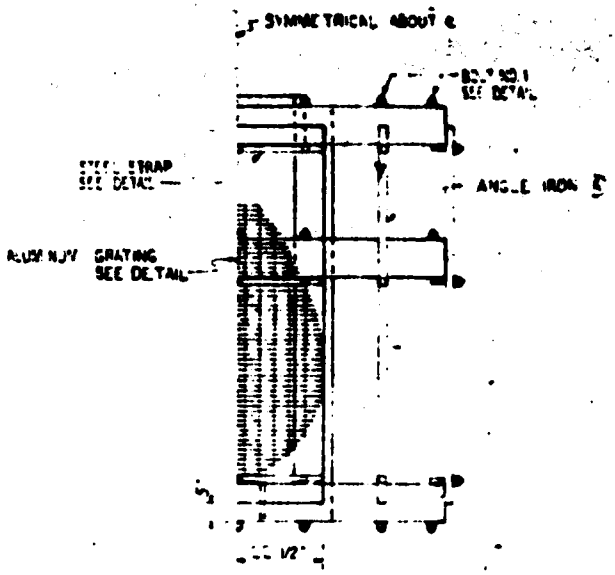
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

1 BOTTOM 5 SQUARES	6400
5 ANGLES	6400
318 BARS	3600

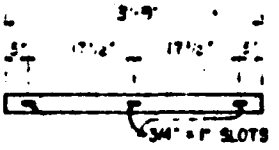
NY-8C8-P



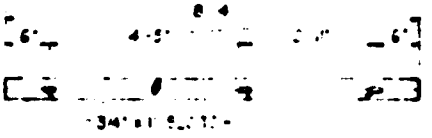
ALUMINUM GRATING DETAIL



PLAN

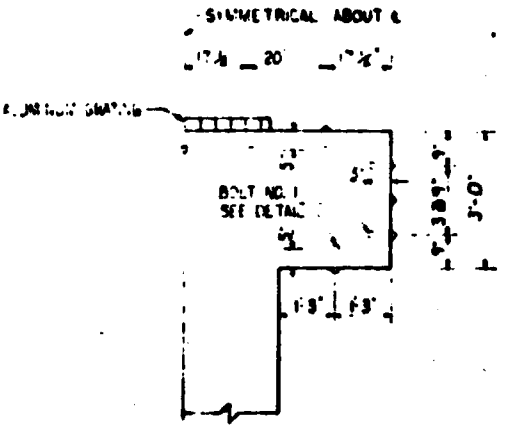


STEEL STRAP DETAIL

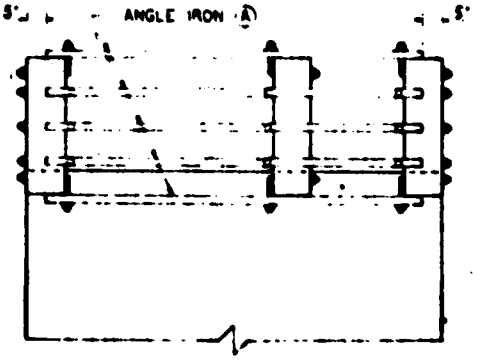


ANGLE IRON Ⓐ

NOTE
ENTIRE TRASH RACK EXCEPT ALUMINUM GRATING TO BE GALVANIZED IN ACCORDANCE WITH SPEC 119



UPSTREAM ELEVATION



SIDE ELEVATION

RISER TRASH RACK DETAILS

BILL OF MATERIALS

LOCATION	ITEM	SIZE	LENGTH	QUAN
Trash Rack	[illegible]	[illegible]	[illegible]	[illegible]
Rack	[illegible]	[illegible]	[illegible]	[illegible]

AS BUILT

DETAIL

BOLT DETAIL N° 1

ON A

Ø Dia Bolts
w/ Hex Nut And Washers
Long

Drill Ø Dia Holes

10" Dia Pipe

LEVATION

SMALL ANIMAL GUARD DETAILS

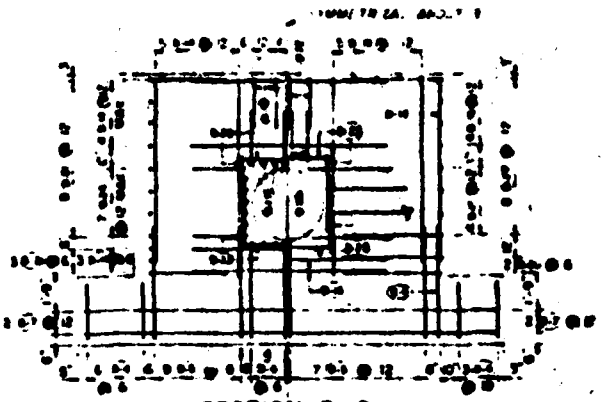
AS BUILT 12/9/58

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 2-C
LITTLE CHOCONUT CREEK
TRASH RACK & SMALL ANIMAL GUARD DETAILS
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

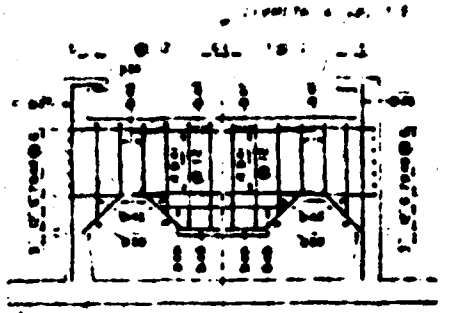
L ERITSON
D ANGELO

NY-2018-P

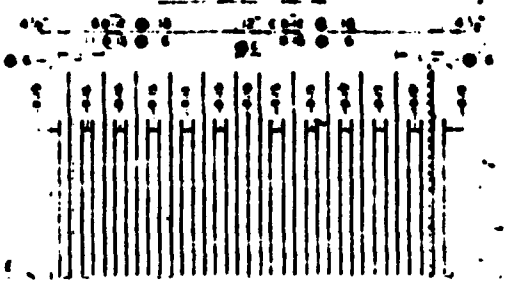
12



SECTION D-D

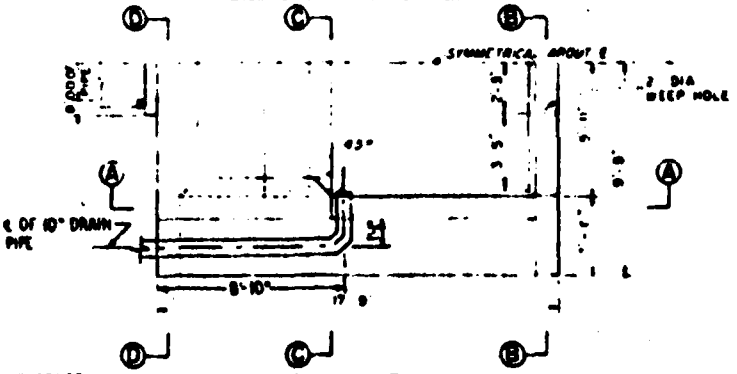


SECTION THRU BAFFLE

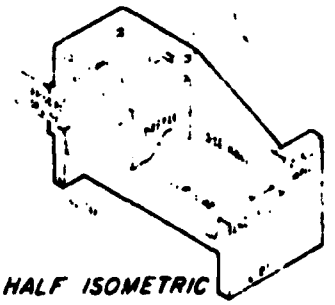


PLAN OF FLOOR SLAB

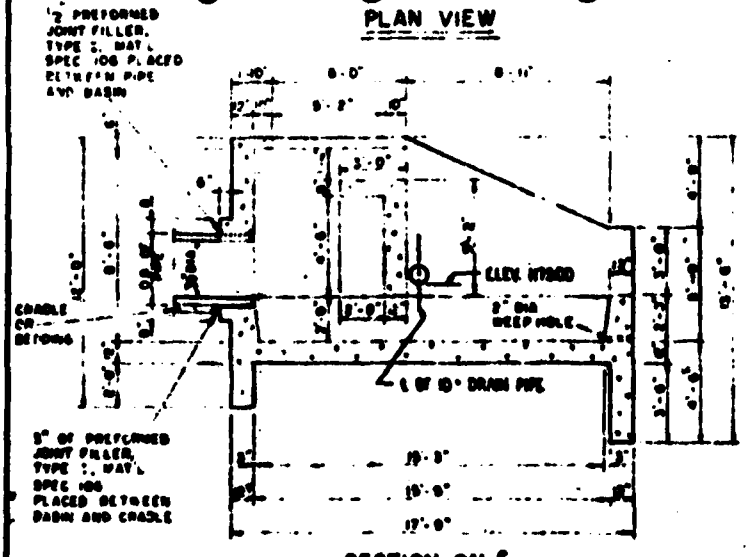
SECTION C-C



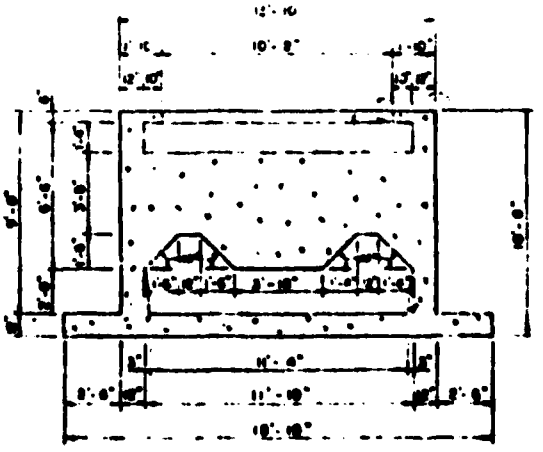
PLAN VIEW



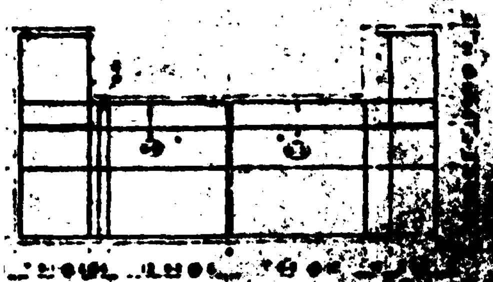
HALF ISOMETRIC



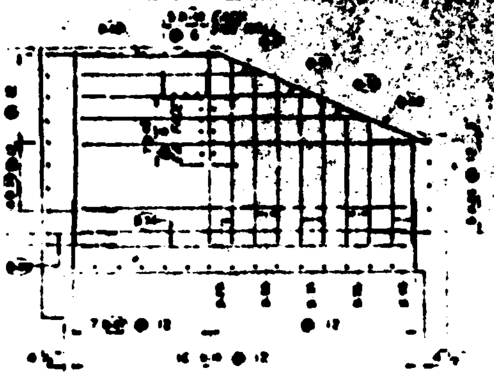
SECTION ON ℄



SECTION THRU BAFFLE

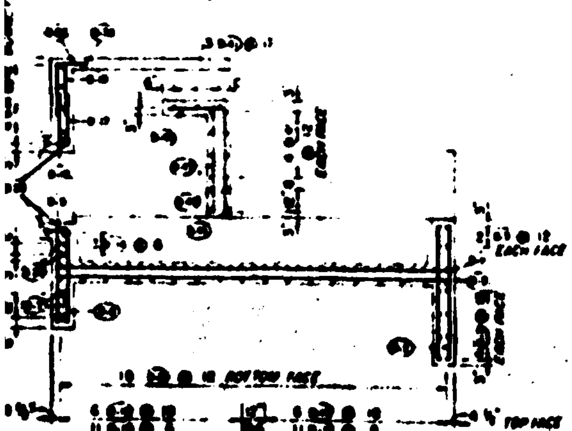


SECTION B-B



SECTION A-A OUTSIDE FACE

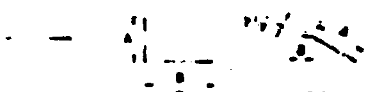
SECTION A-A INSIDE FACE



SECTION ON ℄

STEEL SCHEDULE

[illegible]	LOCATION	[illegible]	[illegible]	LENGTH	TYPE	A	B	TOTAL FT
1	CUTOFF	[illegible]	5	9-0	1			[illegible]
2		30	5	8-0	1			[illegible]
3		12	5	10-6	1			[illegible]
4		[illegible]	5	3-0	1			[illegible]
5		33	5	5-0	1			[illegible]
6		7	5	[illegible]	[illegible]			[illegible]
7		4	5	[illegible]	[illegible]			[illegible]
8	FLOOR SLAB	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21		[illegible]	5	4-0	21	[illegible]	[illegible]	131 00
[illegible]		[illegible]	5	4-9	21	[illegible]	[illegible]	12 00
[illegible]		16	5	3-9	1			85 00
[illegible]		14	5	3-6	21	2-6	[illegible]	48 00
[illegible]	WING WALLS	10	5	5-11	21	2-10	3-1	[illegible]
[illegible]		10	5	5-6	21	2-6	3-0	55 00
[illegible]	[illegible] WALLS	14	5	10-1	21	8-9	1-4	141 17
[illegible]		14	5	8-6	1			119 00
[illegible]		4	5	8-3	1			33 00
[illegible]		8	5	7-3	1			58 00
31		8	5	6-6	1			52 00
32		8	5	5-6	1			44 00
33		8	5	4-9	1			38 00
34		22	5	14-3	1			313 50
35		4	5	13-0	1			52 00
36		5	5	10-9	1			53 75
37		4	5	8-6	1			34 00
38		6	5	6-3	1			37 50
39		4	5	11-7	22	10-6	1-7	46 33
40		30	5	[illegible]	21	4-4	1-0	202 54
41	BAFFLE	11	5	8-0	1			88 00
42		4	5	6-9	21	4-3	2-0	27 00
43		4	5	5-9	21	3-3	2-6	23 00
44		4	5	7-2	21	4-6	2-6	28 67
45		4	5	4-3	1			17 00
46		4	5	3-3	1			13 00
47		4	5	4-8	1			18 67
48		2	5	5-9	1			11 50
49		2	5	3-9	1			7 50
50		5	5	4-6	1			22 50



1 21 22

BAR TYPES

IMPACT BASIN QUANTITIES

REINFORCING STEEL
NO 5 BARS 9020.7 LIN FT 6193.5 LBS
NO 6 BARS 225.5 LIN FT 338.7 LBS
NO 7 BARS 820.0 LIN FT 1676.1 LBS

CONCRETE
REINFORCED 35.42 CU YDS

AS BUILT

SEE SHEET 10 FOR CONSTRUCTION NOTES

SCALE AS BUILT

FINCH HOLLOW, LITTLE CHOCONUT &
TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 2-C
LITTLE CHOCONUT CREEK
IMPACT BASIN DETAILS

U.S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Fred B. Thurer
M WHEELOCK
W H MORGAN

F.C. Cushing

15/16 NY-3018-P

2